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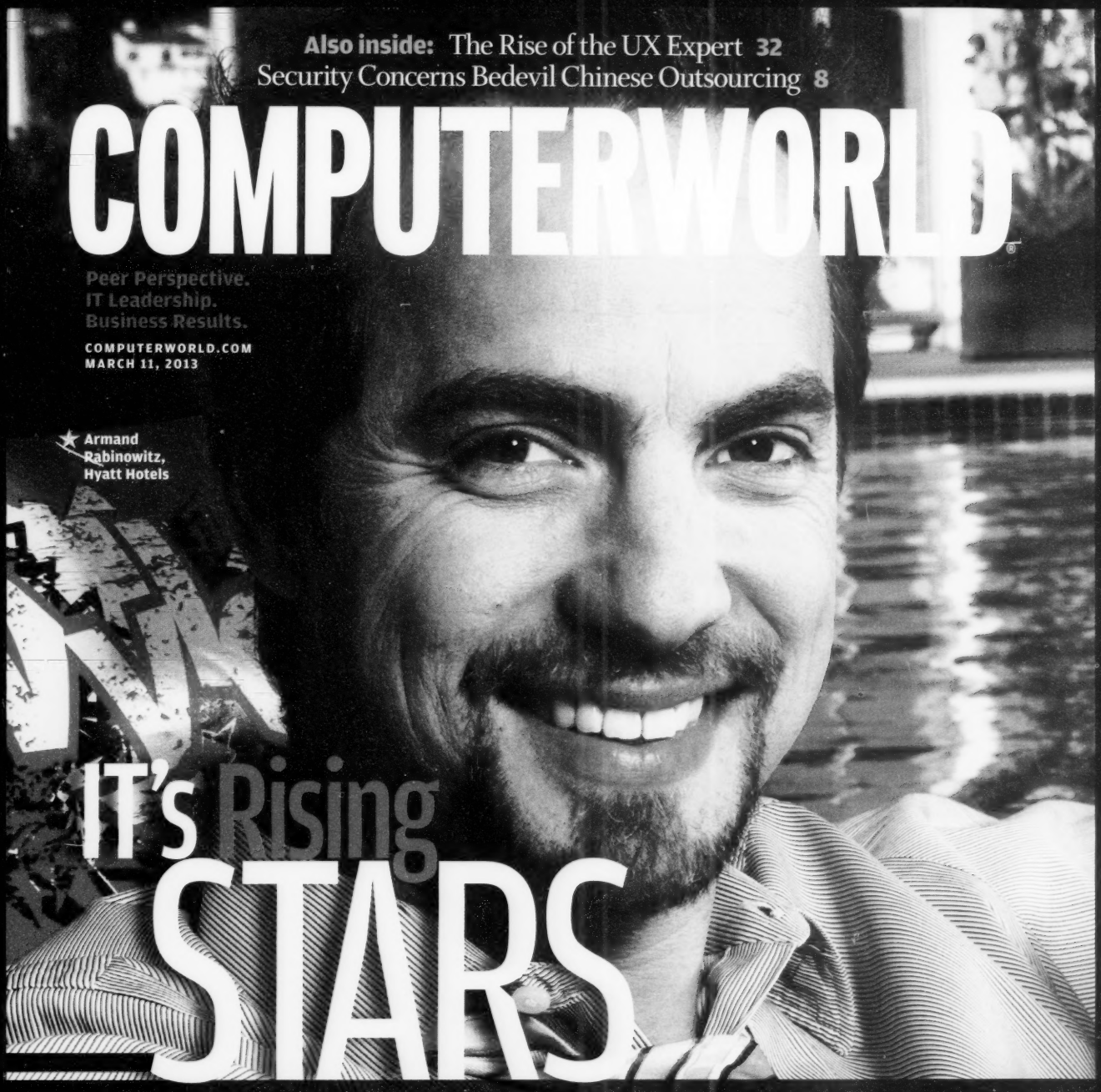

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IT's Rising STARS

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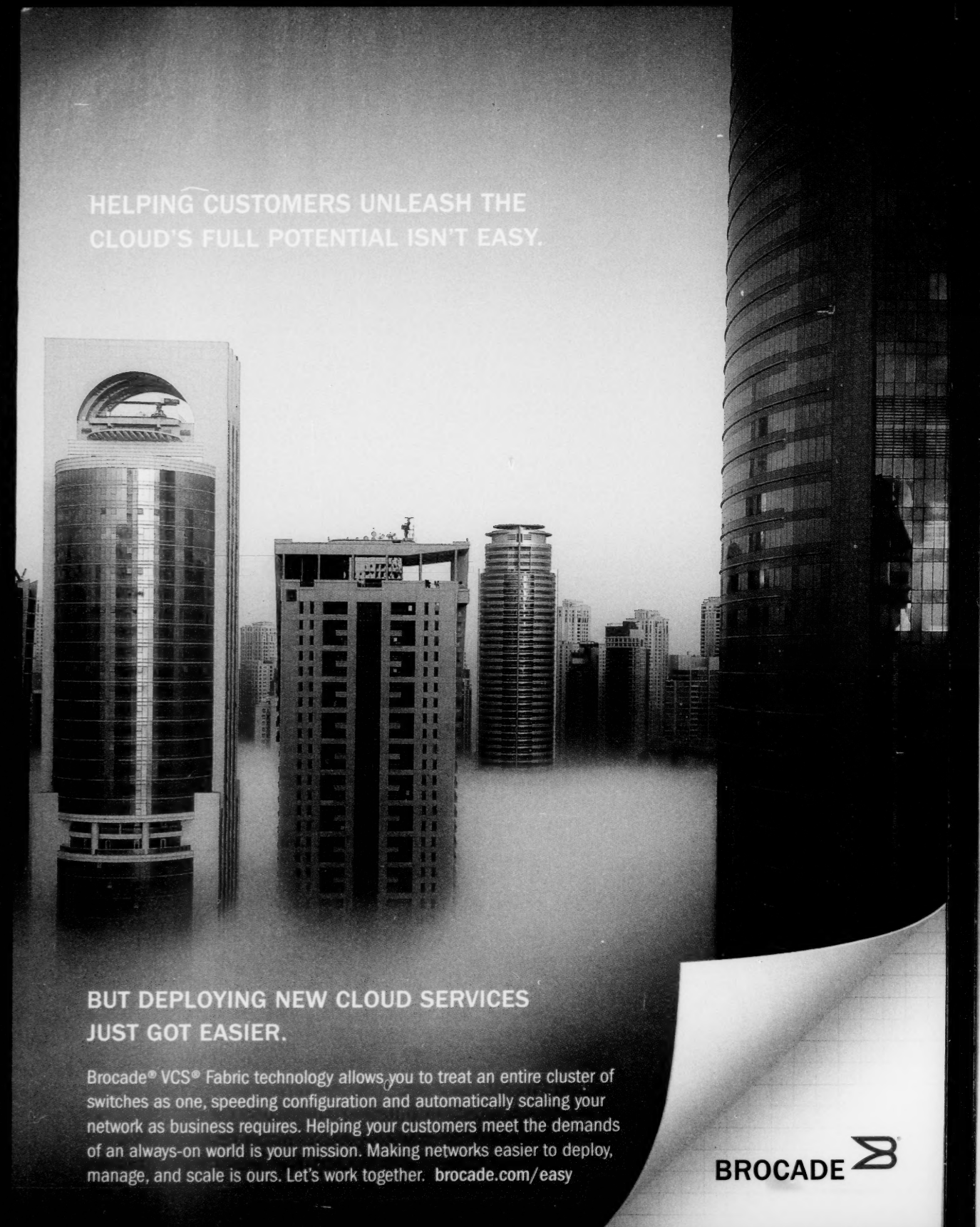
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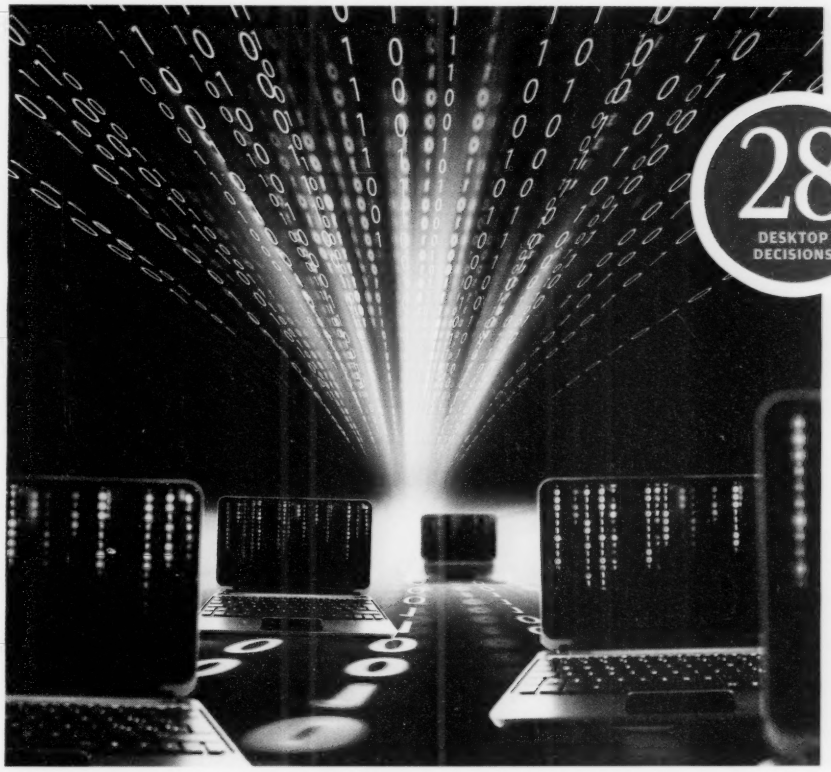

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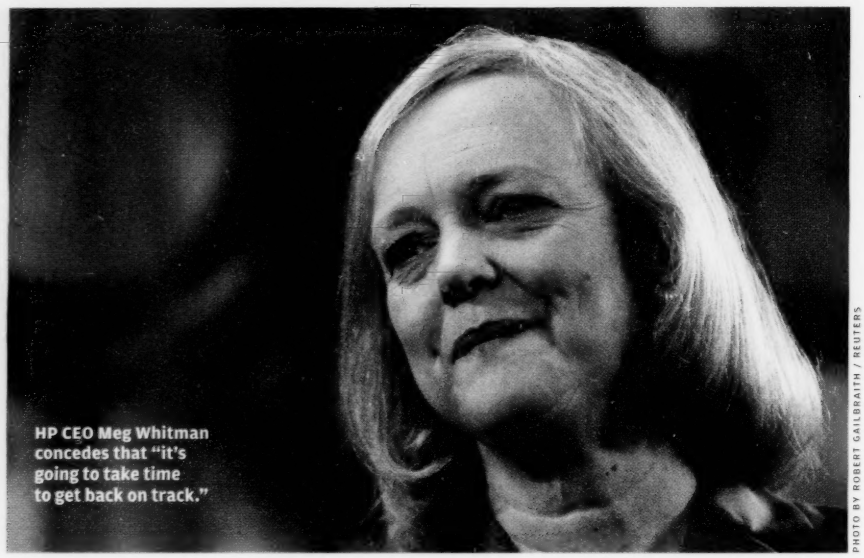

HP CEO Meg Whitman concedes that "it's going to take time to get back on track."

PHOTO BY ROBERT GAILBRAITH / REUTERS

IT INDUSTRY

HP Has 'No Plans to Break Up,' CEO Claims

STRUGGLING HEWLETT-PACKARD has taken several steps this year to assure users and investors that it's working to put past distractions behind it while bolstering its full product line.

In an earnings call last month, CEO Meg Whitman dismissed persistent rumors of plans to sell off parts of the company. "We have no plans to break up," she said.

She argued that PCs and other desktop devices are still key pieces of enterprise computing, HP's strength, and contended that it's important for the company to maintain its expertise in those technologies.

Whitman acknowledged that "it's going to take time to get back on track," but touted new HP hardware technology and its "multiple operating systems" designed for enterprise use.

HP used the Mobile World Congress stage to announce the latest move in its effort to bolster its PC unit — the introduction of the Slate 7 tablet. A 7-in. Android-based device that features dual cameras and a micro-SD card slot, the Slate 7 sells for $169.

Separately, HP announced "Project Moonshot," an effort to design low-power server technologies that, if successful, could enable data centers to use 89% less energy than they would with traditional x86 servers.

Still, HP faces a difficult task. It has reported declining profits and revenue for six quarters, as it continues to try to rebound from a period of turmoil that saw two leadership changes within a year and a botched plan to spin off its PC division.

– James Niccolai and Agam Shah of the IDG News Service, with Matt Hamblen

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CAREERS

Yahoo Looks to Quell Uproar Over Telework Ban

Despite Yahoo's efforts to quell some of the furor, the news that it was calling telecommuters back into the office stirred up a heated debate in the tech sector and beyond.

Last month, Yahoo management told employees that the company would end all work-at-home arrangements in June. The decision made headlines when the internal memo announcing the move was leaked.

With many employees working long hours, many businesses feel that letting people work from home, at least part of the time, is good for work-life balance.

Marissa Mayer, Yahoo's new CEO, apparently sees another side of the issue. "We need to be one Yahoo, and that starts with physically being together," said a Yahoo memo obtained by All Things D.

After days of debate in the media, Yahoo tried to explain the move in a brief statement. "This isn't a broad industry view about working from home," it said. "This is about what is right for Yahoo, right now."

Some wondered if the decision would have broader ramifications. It could "make it harder for Yahoo to hire," said Rob Enderle, an Enderle Group analyst.

Noting that Yahoo's culture had changed, Technology Business Research analyst Ezra Gottheil said, "I wouldn't be surprised [if the changes] led to problems with remote workers."

– SHARON GAUDIN

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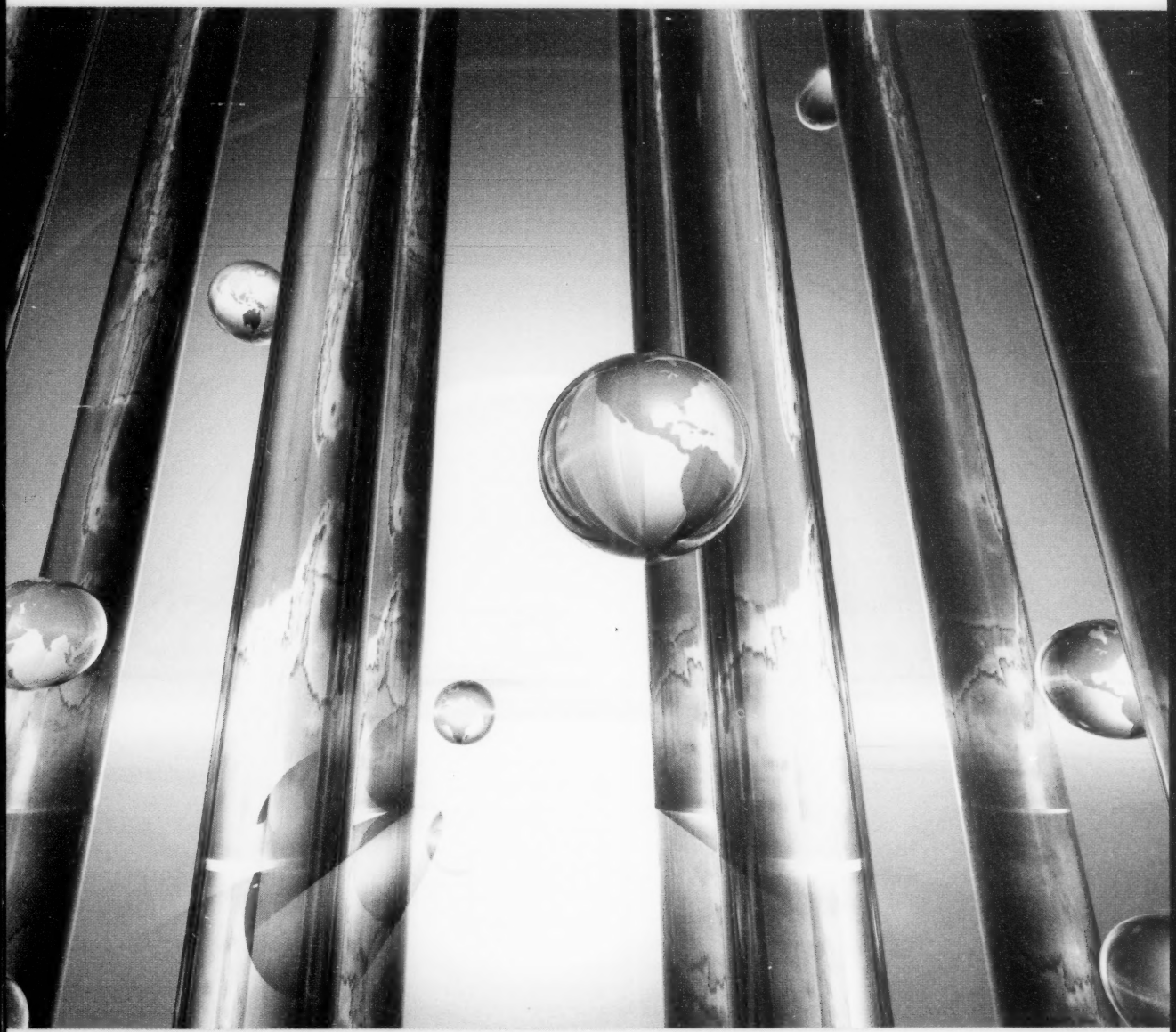

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By John Klossner

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EMERGING TECHNOLOGY

Intel Eyes New PC-Human Interactions

SOFTWARE ENGINEERS are using Intel tools to explore new ways people can use their voices, hand gestures and head-and-eye movements to operate computers.

In coming years, their research is expected to yield tools that could help developers build computer games, help doctors control computers used in surgery or guide firefighters as they enter flaming buildings.

"We don't really know what this work will become, but it's going to be fascinating to watch it play out," said Craig Hurst, Intel's director of visual computing product management, in an interview at the Mobile World Congress trade show. "So far, what we've seen has gone beyond what we thought of originally."

Last fall, Hurst's group released several software development kits that third-party programmers can use to create new applications.

One of the tool kits, the Perceptual Computing SDK, was distributed to outside developers building applications that will be judged by Intel engineers. Intel is planning on awarding $1 million in prizes to developers this year for the most original application prototypes, not only in gaming design but also in productivity and other areas.

Barry Solomon, a member of Intel's visual computing product group, demonstrated how Windows developers are using the tool kits. With a special depth-perception camera clipped to the top of the lid of a laptop, and connected via USB to the computer, Solomon showed how software built with an Intel SDK rendered his facial expressions and hand gestures on the computer screen, with the images accompanied by an overlay of lines and dots to show the precise position of his eyes and fingers.

With that tracking information, a developer can quickly insert a person's face and hands into an augmented-reality scenario.

A company called Touchcast is building a green-screen application that will be available later this year.

– Matt Hamblen

Micro Burst

U.S. spending on IT equipment is projected to grow by 6% to

$474 billion

in 2013.

SOCIAL MEDIA

Twitter Hack Brings 60K New Followers to BK

Burger King saw a surprising upside after its Twitter stream was recently compromised: Tens of thousands of people began following its account.

The company had about 50,000 followers before the hack, but that number shot up to more than 110,000 after the incident. "Interesting day here at Burger King, but we're back!" Burger King tweeted. "Welcome to our new followers. Hope you all stick around!"

Twitter promotes its platform as a tool that companies can use to reach out to customers. But this incident turned that model on its head: Outreach efforts led to embarrassment with the hack, but then the apparent security breakdown aided outreach by generating new contacts with potential customers.

At one point, Burger King's profile message said that the company had been sold to McDonald's.

McDonald's denied involvement, tweeting, "We empathize with our @BurgerKing counterparts. . . . We had nothing to do with the hacking." It was unclear who was responsible.

In early February, Twitter said its servers had been breached by "extremely sophisticated" hackers who may have made off with the names and passwords of 250,000 users.

– JEREMY KIRK, IDG NEWS SERVICE

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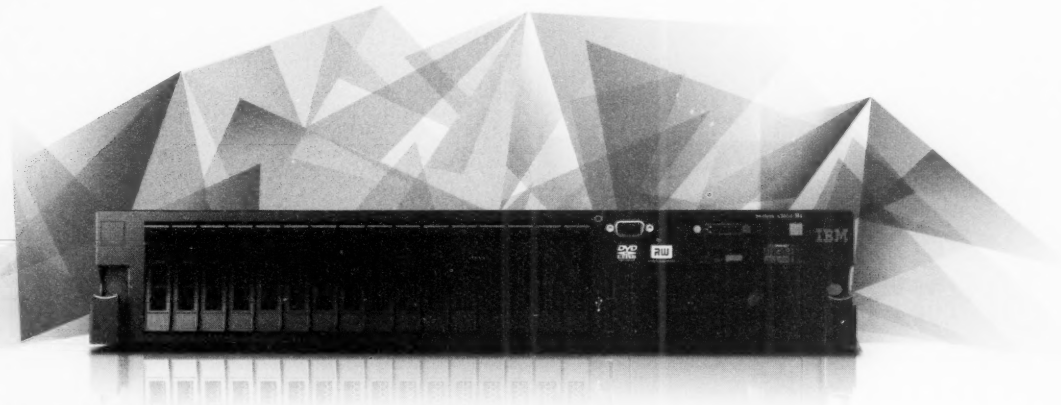

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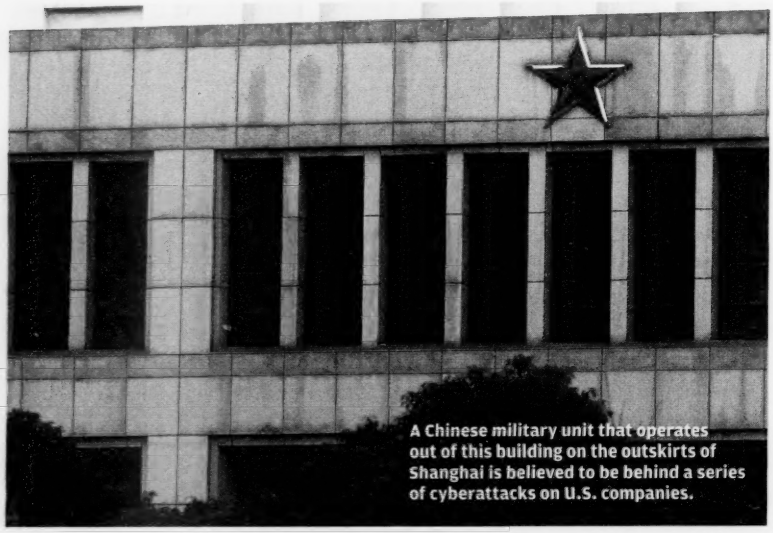

A Chinese military unit that operates out of this building on the outskirts of Shanghai is believed to be behind a series of cyberattacks on U.S. companies.

Security Concerns Dog Chinese Outsourcing

U.S. companies might hesitate to send IT work to China in light of new reports on cyberespionage programs there.

By Patrick Thibodeau and Jaikumar Vijayan

CHINA'S PLAN to create a substantial outsourcing industry was hit with another blow last month with the release of a report that laid bare, in ways never seen before, the extent of the security risks of working in the country.

Ten years ago, there was wide expectation that China would emerge as India's top competitor in the third-party IT services provider market. Since then, China has created an outsourcing industry, but it certainly hasn't thrived.

Jimit Arora, a vice president at business consultancy Everest Group, puts the value of China's IT and business process outsourcing (BPO) market today in the $4 billion to $5 billion range. That figure amounts to about half the annual revenue of Tata Consultancy Services, which is just one of India's large IT services companies.

But from that small base, Arora expects China's IT services and BPO market to grow at a rate of 20% to 25% a year.

That projection comes as security firm Mandiant and the White House released separate reports outlining significant security risks facing companies that do business in China.

The Mandiant report identifies the Chinese military as a main instigator of cyberattacks on U.S. companies. And a White House analysis of theft of trade secrets makes numerous references to China.

Mandiant contends that a unit of the People's Liberation Army (PLA) of China is behind a systematic cyberespionage campaign against the U.S. and several other countries that has gone on since at least 2006. Working out of a 130,663-square-foot building in Shanghai, the PLA unit has likely accessed data at more than 140 companies in countries considered strategic by China, according to the firm's report.

Andy Sealock, a partner at consulting firm Pace Harmon, said the reports add evidence to confirm "what many people already assumed was happening." The security risks of working with China have long been "priced into" the decision-making processes of U.S. companies, he said.

With the release of the two reports, it's less likely that companies that are on the fence will send IT work to China. "This will just strengthen their resolve to stay away," said Arora.

Sealock suggested that the latest findings may prompt the U.S. government to "institute policies and sanctions that will make it more difficult to do business with China."

Security experts warn that several other countries, notably Russia, also have government-run cyberespionage programs targeting U.S. companies in a wide range of industries.

Intelligence reports dating back to 2005 have consistently warned that the U.S. is a target of economic espionage undertaken by state-sponsored entities around the world.

Nonetheless, said James Slaby, a security analyst at HFS Research, as long as companies follow best practices for securing data, outsourcing to China leads to only "nominally more risks."

Basic security practices "are more important than thinking about where you are physically located," he said.

Daniel Castro, an analyst at the Information Technology & Innovation Foundation, said it's unlikely that most "businesses will rethink their offshoring decisions because of the Mandiant report."

However, he warned, "they should all be taking a close look at their risk exposure and mitigation measures for these types of threats." ◆

> [Basic security practices] are more important than thinking about where you are **physically** located."
>
> SECURITY ANALYST, HFS RESEARCH

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Utility Takes iPod Touches to High Places

Technicians use Apple devices during on-site repairs of massive NextEra Energy wind turbines. By Matt Hamblen

OFF-THE-SHELF consumer handheld computers are starting to show up in some of the most precarious of workplaces.

For instance, about 1,700 NextEra Energy technicians use Apple iPod Touch devices while they service gargantuan energy-generating wind turbines.

The iPods are loaded with technical information and repair diagrams that technicians access while working about 300 feet above the ground inside and outside of turbines at the clean energy provider's wind farms.

With the information so close at hand, a technician won't have to climb down a ladder and drive a truck back to a company office to search for information on a PC, said Lakshman Charanjiva, CIO of the Juno Beach, Fla.-based utility.

Charanjiva said he came up with the idea to provide the iPods to the wind turbine techs during a visit to a wind energy farm in West Texas. While he was there, he climbed with technicians up a ladder into the dark enclosure of a turbine in 110 degree heat.

"It's not something you want to do if you have a fear of heights or closed spaces," Charanjiva told an audience at the *Computerworld* Premier 100 IT Leaders conference in Tucson earlier this month. "I needed to do something for those guys to save them time going back and forth."

Charanjiva said that he has estimated that use of the iPods has cut six to eight hours of work per technician per week since the program was implemented about a year ago. He also noted that iPods are up to 10 times less expensive than a likely alternative solution, rugged handheld devices.

NextEra is also in the process of putting Wi-Fi hotspots inside of its service trucks. That will make it possible for technicians to access the Internet and the corporate network from a perch atop a wind turbine.

The utility is now considering whether to equip technicians' hardhats with video cameras so they can stream videos of repair problems to experts in the company's offices, Charanjiva said. The key consideration is whether the Wi-Fi hotspots will provide sufficient bandwidth to support the video streams, he said.

Charanjiva acknowledged that the company's iPod program is "not rocket science, but has been a huge benefit" to NextEra.

Meanwhile, NextEra subsidiary Florida Power and Light has deployed 500 iPads to replace rugged tablets that technicians use during power outages.

The iPads, which cost less than $500 apiece, are replacing ruggedized tablets that cost $5,000 each. While rugged devices often last five years or more, and iPads typically last two years or less, "the difference in price is worth it," Charanjiva said.

Since many houses now have two-way smart meters, technicians can use the iPads to easily track the locations of homes that experience power outages.

During a hurricane, if outage locations are delivered to tablets in trucks, technicians can identify patterns more quickly than they could in the past, and they can use that information to figure out the locations of switches that could be out of service.

NextEra can also overlay weather satellite information about the path of a storm on top of the outage data to decide where to send repair crews.

Having that data has helped NextEra come closer to its goal of restoring service after storms within 24 hours, Charanjiva said. ◆

> "It's not something you want to do if you have a **fear of heights** or closed spaces."
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> CIO, NEXTERA ENERGY

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THE Grill

Greg Taffet

His work is helping to get technology and Internet access to those in need.

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What's the next step you'd like to take in your career?
Take on community-oriented projects full time.

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What's the best career advice you've ever received?
Do everything to the best of your ability, whether it's a project you like or one that's not your favorite.

Have you found an effective time-management technique?
I'm still looking for a time machine. I run out of time all the time.

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AS ANY CIO KNOWS, *an executive position is enough to fill up one's time. But Greg Taffet, CIO at U.S. Gas & Electric, felt a need to contribute his time and skills to another important IT endeavor: expanding access to technology in his Florida community. Taffet volunteers with the South Florida Digital Alliance, a group of area businesses and charitable organizations working to provide technology and Internet access to people who can't afford them. Here he talks about the digital divide, his work to bridge it, and what he has learned about leadership.*

Tell me about your work with the alliance. I am now taking on a leadership role to bring Internet access to the county parks in Miami-Dade County, and hopefully we'll expand to other counties in Florida. It is definitely a team-building exercise to bring the parks commission, the Internet providers, the universities together so we can provide this service to all the people in the county.

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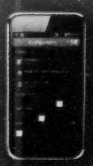

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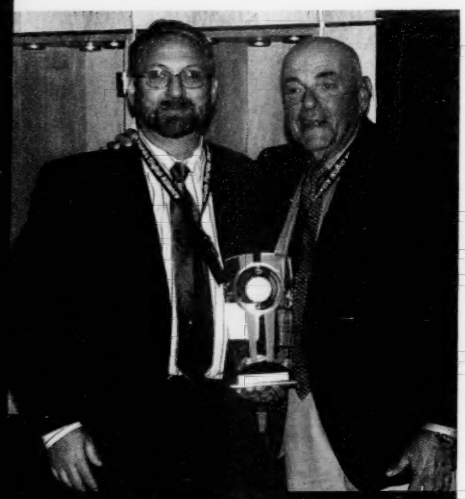

Greg Taffet accepts the South Florida Digital Alliance's Universal Access Award from University of Miami CIO emeritus Lew Temares.

> **With higher rates of unemployment** [among lower-income citizens] it's very critical that we provide the tools that people need to bridge that [digital] divide.

What would the service look like? In some parks we have buildings, so we'd put in equipment that's been donated. We're dealing with the universities to get interns to help provide support to the people who come to the parks, and we're [working] with Comcast to bring in high-speed access at cost. We're getting great support from the parks commissioners, who are encouraging us. The businesses are looking at this as a way to get a better workforce.

Do your efforts extend beyond technical work into political or advocacy roles? I am learning that when you pick a good project, everybody is in favor of helping you, but very few people will actually do anything. So I'm doing more of a team-building, implementation, fundraising and advocacy role. It's not very political because everybody is in favor of this, but getting everybody to work together, getting all the interns set up, to coordinate schedules, to raise the money — that's the main thing I'll be doing at a very high level. We have everybody in the town and parks commission and the businesses all saying yes, but it takes somebody to actually do it. And that's me. I see this as very similar to when I brought high-speed Internet into the classrooms when my kids were in school. In that case, I did drill holes and pull wires. But in this case, I don't see me doing as much of that. [I'll be] coordinating all the people needed to get this done.

Does the experience teach you something new about leadership? The biggest thing that you learn is that you have to get people motivated. And you can always motivate people to do things that they're good at doing.

Where, and why, does the digital divide persist today? It is definitely an economic barrier right now, and with higher rates of unemployment [among lower-income citizens] it's very critical that we provide the tools that people need to bridge that divide. Right now, here in Miami, we have a huge school system — it's the fourth-largest in the nation. But 60% of the children are eligible for free or reduced-price lunch, and when you see numbers like that you [realize] those are the people who can't afford to buy a computer. These are the kids and parents who will come to the parks to use this technology. Some of the older people will be able to come and learn to use Skype and be able to talk to their grandchildren.

Does this divide have an impact on businesses in the area? The impact is very significant because we're looking for employees who are computer-literate. You have to have these skills to be hired in any position. In this area, businesses are having trouble finding qualified people to fill the jobs. Many of the jobs are changing from blue-collar to technology-oriented, and many of them are requiring just basic computer skills, being able to do data entry and be proficient using the computer. And it's more from the older generation, because just about all kids coming out of school today know more than their parents.

You've worked as a technology adviser to other nonprofit institutions. What has that work taught you about leadership? That you must understand the business and the business strategy of the nonprofit. That is so much more important than understanding the technology. Because there are 50 different ways to solve a problem, and the business is looking for something that really aligns with its strategy. If you're just proposing technology, most people will brush it aside and say, "This doesn't solve our problem." They want a solution, not a technology.

What are the biggest challenges in your job today? I see the workplace evolving from what people used to call work-life balance to work-life integration. The fact that technology is available everywhere, that people can work on their cellphones, tablets and laptops, the line between life inside and outside the job has blurred to a point where we have to worry about how [work and life integrate] rather than the balance between the two of them.

We have to become much more than just hands-off managers now. We also have to look at how much time people spend, whether they're actually accomplishing things, whether they are doing the work themselves or working with somebody else and if somebody else is doing most of the work for them. Now you have to be much more intuitive because you don't always see them. Sometimes they don't surface to ask you for help.

— *Interview by* Computerworld *contributing writer* **Mary K. Pratt** *(marykpratt@verizon.net)*

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PAUL GLEN

The Hazards of Literal Listening

We geeks wonder, What's wrong with being literal, especially at work?

I WAS DESCRIBING the data sources for each field in my colleague's report, when I saw her expression transform from interest to upset. "Is something the matter?" I asked. "You did ask why the report is showing the wrong information. Right?" She replied, obviously annoyed, "You know that's not what I meant. Please don't be so literal." After a moment of confusion, I realized that she really wanted to know what we needed to do to fix her report, not a detailed explanation of the failure mode.

At some point, everyone in IT has this sort of conversation. We geeks find this complaint, that we are annoyingly literal, both confusing and unfair. What's wrong with being literal, especially at work? In our work, precision is a virtue. Isn't it disrespectful to presume that you know what someone else is thinking? Wouldn't answering a question other than the one they asked make them think that we don't listen to them? They'd complain about that too.

The fact that this sort of problem is so common should tell us that there's something we're missing, but instead of learning from these episodes, we write off the nongeeks as illogical and difficult. We stick to our self-righteous perspective and refuse to consider what their annoyance tells us. The message we're missing is that we need to master more than one way of listening and recognize which mode is best in a particular situation.

In literal listening mode, we assume that our job is to absorb information. We pay close attention to words, ask clarifying questions to ensure that we understand questions and respond to them exactly as they are posed. We assume that the content of communication is complete, unambiguous, well understood and transparent — that language is like code.

I think it's safe to say that we as geeks default to literal mode.

Others usually prefer to operate in a more flexible, connected listening mode. Connected listeners pay attention differently, listening to both literal and intended meaning. Connected listeners interpret information with assumptions about context as well and the subjective experience of the person they're listening to, about their emotions, ambitions and constraints. Connected listeners seek to understand what the other person intends to communicate, what's important to them rather than precisely what it was they said.

When our colleagues expect the more adaptable connected mode but instead get literal listening from us, they become frustrated. In those moments, they feel that we're like machines, incapable of relating to them as humans. Sometimes they even feel that we are being condescending, belittling them for their lack of specificity.

So how can you tell which mode you should be in? The simplest cue is to ask yourself, "Are we discussing what technology will accomplish, or how it will work?"

Literal mode is appropriate when discussing how things work, but connected mode is essential for deciding what it will accomplish. When our business colleagues are excitedly imagining a possible future, focusing on mechanics feels like we're crushing their dreams.

The first step to becoming a more flexible listener is to analyze the nature of every conversation and recognize which mode fits best for that moment. When you've mastered this, you'll find that you get invited to be part of more conversations where important decisions are made. ◆

Paul Glen, CEO of Leading Geeks, is devoted to clarifying the murky world of human emotion for people who gravitate toward concrete thinking. His newest book is *8 Steps to Restoring Client Trust: A Professional's Guide to Managing Client Conflict*. You can contact him at info@leadinggeeks.com.

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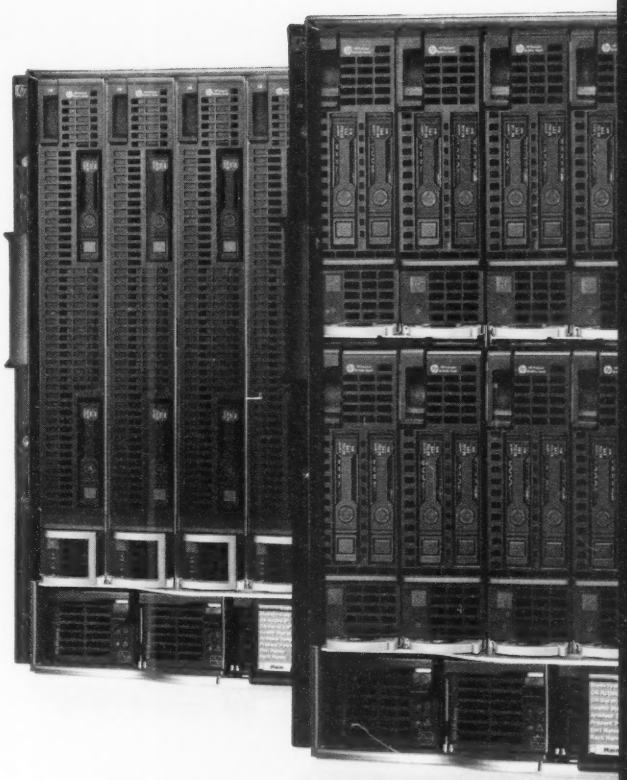

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» "Really what I do is IT innovation," says Armand Rabinowitz of Hyatt Hotels.

MANUELLO PAGANELLI

IT's Rising STARS

Tomorrow's CIOs are already transforming enterprise IT as we know it, bringing their fresh, sometimes radical visions of how technology can enable business now and in the years ahead. **By Tracy Mayor**

ASK ARMAND RABINOWITZ about his senior-level IT position at Hyatt Hotels, and here's what you won't hear: any talk of applications, architecture, virtualization or storage. No mention of data centers, networks or the cloud. Not once does he reference a single piece of hardware. Not once does he use the word *user.*

It's not that Rabinowitz doesn't care about those trappings of enterprise IT — he does. It's just that he views them as a means to an end, and the end is what excites him. When asked to describe his job — he's Hyatt's senior manager of IT process improvement — he talks in a rapid-fire clip about creativity, change management, service delivery and the customer experience.

"Really what I do is IT innovation," he says. "I came to Hyatt" — from a career in the West Coast entertainment industry — "because I saw there was an appetite for leveraging technology to change hospitality's sea of sameness." Rabinowitz, 37, specializes in wooing younger customers with a more high-tech, high-touch experience. One case in point: He took the lead in developing a new online lock system that allows guests to bypass the front desk by checking into a room via mobile device and then using their loyalty card as the room key.

Those kinds of customer-facing, tech-driven process improvements are Rabinowitz's passion, and he thinks and hopes that IT is headed toward more such innovations. "Traditionally, information technology has been the backbone of a business," he says, "but it was just keeping the business functioning and performing, not helping to drive it forward."

"Drive it forward" could be the motto for Rabinowitz and five other IT leaders designated as "rising stars" by their managers, who themselves were named *Computerworld* Premier 100 IT Leaders this year.

Too young to be baby boomers, too old to be millennials, these rising stars, all thirty- and fortysomethings, have years of experience behind them and years of growth ahead of them. Demographers would peg them as Generation X, but slackers they're not: If their bosses have reached the pinnacle of their careers, the rising stars are acting as their lieutenants, very much out in the field rather than waiting in the wings.

In order to do more for our business folks, we need to do less of that traditional IT thing where you're heads-down working furiously on a project, but you're isolated from the business.

LEIGH ANN THOMAS, SENIOR BUSINESS RELATIONSHIP MANAGER, AMERICAN WATER

Though their titles, duties and industries vary widely, these rising stars all see themselves as facilitators who can fix business problems with tech solutions and, as Rabinowitz puts it, "conduct the orchestra of contractors and vendors" with which most companies now engage, thanks to outsourcing and the move to cloud computing.

That line of thinking is in sync with the marketplace, says John Reed, senior executive director at Robert Half Technologies, an IT staffing firm. "When you think about the role of an IT leader, the job is very different than what it was even just a few years ago," he points out.

As IT shifts from being a support function to being an engine for cost reduction and profitability, tech leaders need to be business-savvy strategic thinkers with top-notch communications skills. "You need to be able to think critically about using technology to achieve corporate goals," Reed says, "and then you need to make a compelling case in the corporate boardroom."

Above all, rising stars fear boredom and crave creativity. "Having a creative component is important to me and to people of my generation," says Rabinowitz. "Industries that have been around a long time have a tough time changing, but we value creativity and change."

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So does Rabinowitz's boss, John Prusnick. "Armand has the ability to think creatively — I won't say 'outside the box,' but in different boxes. You can put him into a situation with new parameters and he adapts well," says Prusnick, director of IT innovation and strategy. Those are qualities tech staffers need at Hyatt, which has a small IT footprint thanks to an early move to the cloud and multiple partnerships with third-party providers. "Most of the people we have on our respective teams are not managing technology but managing business relationships," says Prusnick. "It's a critical skill for the new modern IT professional."

That's a sentiment that's widely held in other industries besides hospitality. "These days we're seeing a significant difference in who's getting hired and promoted," says Marshall Oldham, director of recruiting at IT staffing firm TEKsystems. "During the dot-com boom and the early 2000s, you got hired and promoted if you had a specific level of technical expertise that other people didn't have," he says.

Now the questions have changed, Oldham says. "Do you fit into the corporate culture? Do you understand the line of business? Can you manage people? These have all come to the forefront."

Here's how these rising stars are answering those questions in their own unique ways.

Lynn Costa, 43

Vice president, shared services
Scholastic, New York

What she does: Lynn Costa joined children's book publisher Scholastic four years ago, at the behest of her boss, senior vice president and CIO Saad Ayub, who had also been her manager at The Hartford Insurance Group. Since he knew what she was capable of, Ayub felt comfortable loading Costa's plate high.

As vice president of shared services, Costa functions like a divisional CIO, overseeing corporate enterprise applications like Workday for HR. She is also responsible for access management, help desk, mobility strategy and other software-as-a-service (SaaS) initiatives. "It's most exciting how we're leveraging technology to improve productivity," says Costa, who has 60 people reporting to her and serves some 8,500 U.S. employees.

What she brings to the table: Costa's specialty is identifying processes that support change. "It's really solutions and problem-solving," she explains, "putting the right organizational structure in place to get things done." Specifically, Costa identifies the structure, governance and standards that now underlie enterprise architecture, project management, business analysis and ITIL functions at Scholastic. "It's changing the way IT is working," Costa says. "IT needs to work cross-organizationally, in a matrix environment."

Her vision for IT: "With the evolution of technology — SaaS, cloud, mobility and consumerization — the role of the CIO and his or her reports is changing," Costa says. "It's a consultative model versus an execution role." In the past, Costa had been tasked with overseeing ambitious application development projects, but that's changing. "More and more we're leveraging what's already built and provided to us via software as a service," she says. "Our role now is as a strategic business consultant, to understand what they're trying to get done and to leverage the right technologies for them."

David Paschane, 43

Director, Office of Strategic Services
National Capital Region IT
U.S. Department of Veterans Affairs, Washington

What he does: David Paschane heads up a small office with a big impact on one of the largest bureaucracies in the country. As director of the Office of Strategic Services at the U.S. Department of Veterans Affairs, Paschane works with a five-member team to solve organizational problems using technology and applied science.

"We're like in-house consultants," Paschane explains. "We define and measure key elements of the organization — how information systems work, what people know and don't know, the triggers by which things get done — and once we do that, we apply IT in a very clean, contemporary way" to help improve performance and, as he puts it, "debureaucratize" departments.

Things My Mentor TAUGHT ME

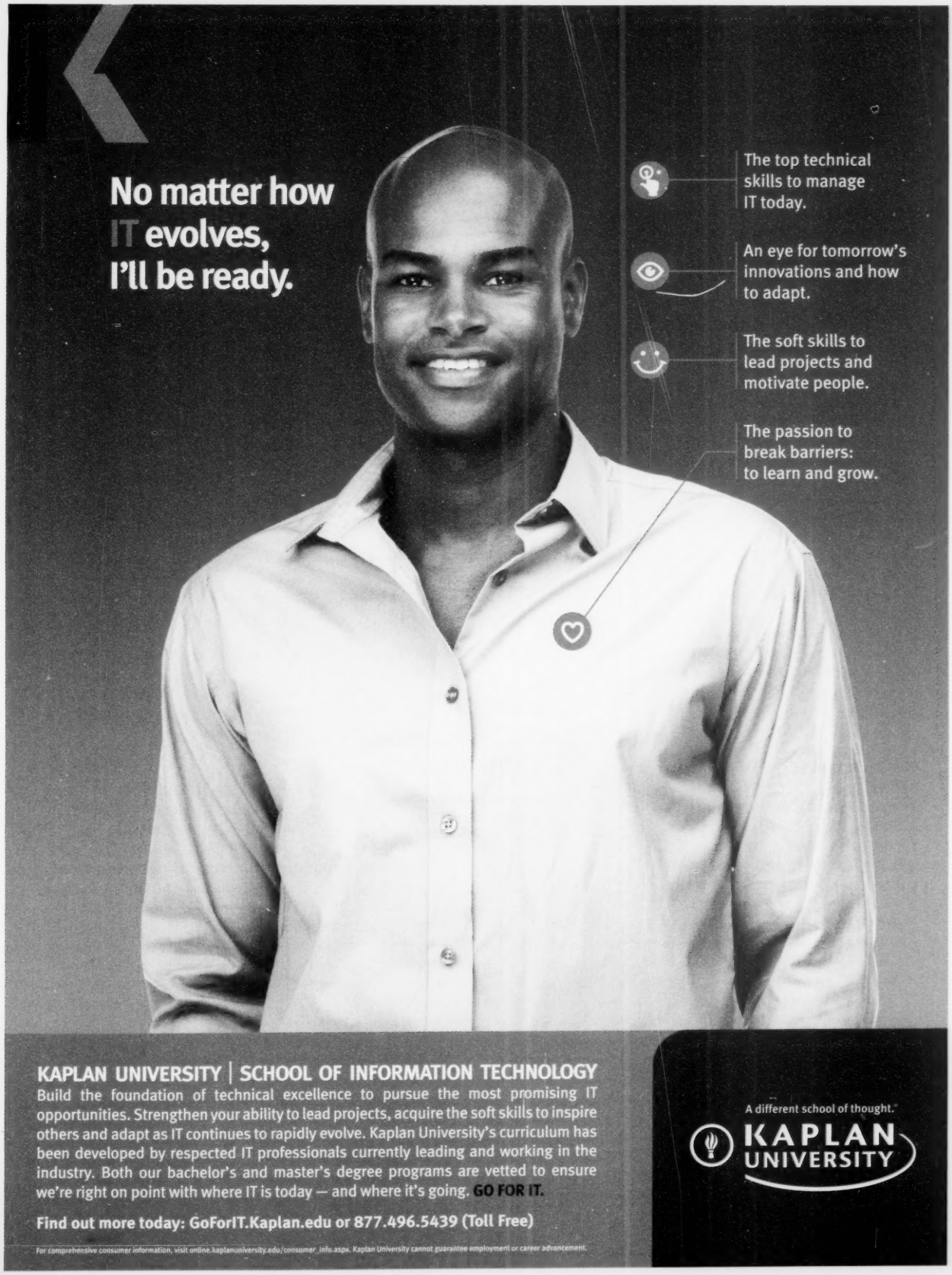
YOU DON'T GET TO BE one short hop away from the corner office in IT without learning a thing or two along the way. Some of our rising stars share words of wisdom they picked up, both from their Premier 100 IT Leader bosses and from other mentors.

"One of my former managers had a very calm, pragmatic style of leadership, based not on emotions but on impact. I learned a lot from that. [Quintiles CIO Richard Thomas] comes with significant in-depth knowledge of every department that's here. He challenges us to look at things differently. His motto is to tackle the hard yards first."
—Joe Donnici, vice president, core IT, Quintiles

"What I've learned [from vice president and CIO Mark Smith] is to be slightly unreasonable sometimes. You need to push people to a slightly less comfortable place if you're truly going to get them to innovate."
—Leigh Ann Thomas, senior business relationship manager, American Water

"[Senior vice president and CIO Saad Ayub] is a real visionary and a strategic thinker. He's helped me become more forward-thinking, better at translating and interpreting everything that's coming in. And he's taught us all the importance of having fun at work."
—Lynn Costa, vice president, shared services, Scholastic

— TRACY MAYOR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Thus far, the Office of Strategic Services has taken on some 15 case studies, all aimed in one way or another at optimizing performance of people and departments. "If we can get 100,000 veterans to stay in school this semester because we fixed a problem within the GI Bill processes, that's a win," Paschane says.

What he brings to the table: Paschane may work *in* IT, but he's not necessarily *of* IT. With a master's degree in behavioral-organizational research and a doctorate in medical geography, Paschane's specialty is the really big picture — applying science and technology to human and organizational development. He developed and now champions a discipline, the Performance Architectural Science Systems (PASS), that taps the power of operational analytics, advanced media and emerging technology to help organizations shift from heavy bureaucracies to what he calls "light enterprises" — which feature increased capability, reduced costs and the ability to innovate.

His vision for IT: "The future of work is changing very quickly, and few CIOs get it yet," Paschane says. "They're not dealing with technology; they're dealing with knowledge workers." A successful information leader's No. 1 goal should be figuring out ways to support employees to help them achieve a higher level of concentration and deliver high-value output, he says. To that end, his group is testing tools like a "very fast continuous virtual desktop" and a dynamic online workspace that encourages productive collaboration. "CIOs who see the shift realize the richest opportunities are not in the consumption of technology but in the value of information to the organization," he says.

Things are going to break every day, and you are going to have critical incidents that can be very difficult. The key is to maintain a level of calmness.

JOE DONNICI, VICE PRESIDENT, CORE IT, QUINTILES

Bill Mayo, 47

Director, U.S. Commercial IT
Biogen Idec, Cambridge, Mass.

What he does: When Bill Mayo showed up for a job interview at Biogen Idec two and a half years ago, he was upfront in confessing he hadn't thought about biology since high school and didn't know much about the biotech industry, where Biogen Idec has carved out a niche developing treatments of neurodegenerative diseases, hemophilia and autoimmune disorders.

That didn't faze Greg Meyers, Biogen Idec's vice president of IT — he had recruited Mayo for what he *did* know. Thanks to long stints at two blue-chip consumer products companies, Gillette and Procter & Gamble, Mayo was an expert at supply chain technology, just what Meyers was after. Biogen was expanding into new markets and developing an increasingly complex set of supplier, contract manufacturing and distribution relationships.

Now, as head of Biogen Idec's Commercial IT group, Mayo works closely with business unit leaders to make projects happen. "The question is always 'How can IT help the sales, patient services and marketing teams?'," says Mayo. "In the broader sense, we ask, 'What do we as a company need to accomplish? And how can IT help?'"

What he brings to the table: As a biotech outsider, Mayo's value add is his ability to question. "Because I don't have a preconceived notion as to why this industry works the way it does, I don't come in thinking things have to be done a certain way," he explains. "So for everything from leveraging the ERP tool that we bought to establishing good change control, I'm always asking, 'Why are we doing this?' 'Why don't we have an approach for that?'" Mayo says. "I bring that different perspective."

As he rises through the ranks, Mayo finds his role changing; he's becoming less of a technologist or even a business leader (he has an MBA from Northeastern University in addition to an undergraduate computer science degree) and more of a big-picture visionary.

His vision for IT: "I can't think of a single job in our organization that is not hugely reliant on IT; you have to understand IT to do the job," he says. That pervasiveness of technology throughout the company, coupled with cloud computing and the consumerization trend, could well spell the end of old-school IT, Mayo predicts. "Companies are not going to own data centers or host their own applications. In 20 years or whatever, the notion of a separate IT organization as a keeper of the data will be gone. IT becomes part of the fabric of the organization," he says.

Under that scenario, Mayo sees IT managers like himself not necessarily being expert in this or that technology of the moment, but fully embracing the role of tech leader. "It's a bit of providing inspiration, a bit of being a mentor, a bit of giving good advice and a bit of getting out of people's way," Mayo sums up. "The value I can give the IT organization is to help other people be great."

Leigh Ann Thomas

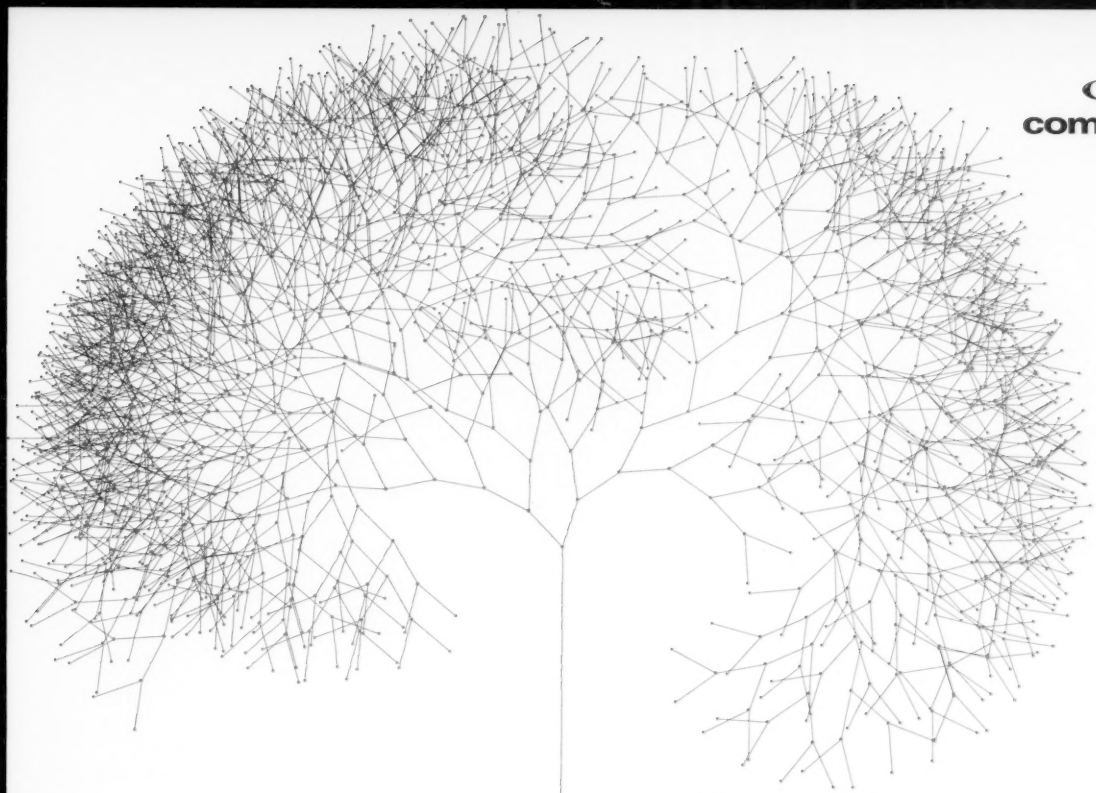
Senior business relationship manager
American Water, Voorhees, N.J.

What she does: Leigh Ann Thomas is the first person to hold the title of senior business relationship manager in the Information Technology Service department at American Water, the largest investor-owned water and wastewater utility in the U.S.

In the new role, her sole focus and purpose is to demonstrate the value of IT to the business. Beyond that lofty goal, Thomas finds herself working without a road map. "It's intriguing," she says. "I define my role day to day. There are no best practices. It's a completely blank canvas."

Since June 2012, when American Water vice president and CIO Mark Smith handed her the new responsibilities, Thomas has been working her way through a five-step process to put together a model for the role, starting with a "listening tour" to collect feedback from both the ITS group and multiple business partners — no small task in the large, geographically dispersed company. "There are a lot of stakeholders," Thomas observes. The next phase is to prioritize that feedback and "zero in our energies" on IT investments with the biggest payback for the business side.

What she brings to the table: Thomas sees her main contri-



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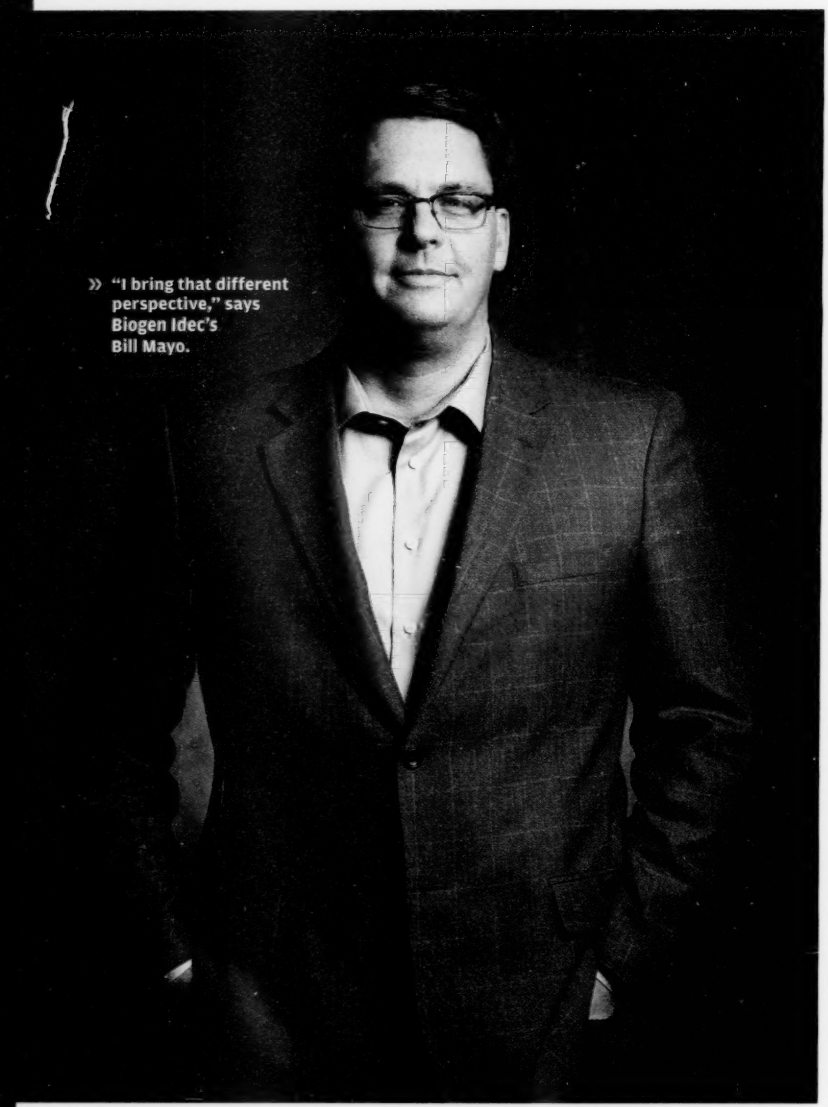


» "I bring that different perspective," says Biogen Idec's Bill Mayo.

bution as being a conduit between business units and IT. "It's a translator role," she says. "I build relationships and credibility for IT from the ground up." She does that by going out of her way to drill down for a deep understanding of what the business needs and how IT can help. "IT folks need to have a very solid understanding of their core business," she says. "Wherever I've worked, I've always initiated my own rotational job-shadowing efforts so I can understand what the business is going through day to day. I'm a big believer in walking a mile in the end user's shoes."

Her vision for IT: "Honestly, I think what IT in general needs to do is *less*. In order to do more for our business folks, we need to do less of that traditional IT thing where you're heads-down working furiously on a project, but you're isolated from the business," says Thomas. That approach is what gave IT a reputation for being nonresponsive, hard to find and spread too thin. The solution, she says, is less keeping the lights on and more strategic partnerships. "Users today are tech-savvy. They can figure most things out for themselves" — leaving IT free to focus on business relationships and "zero in on mission-critical tech initiatives that add value."

Joe Donnici, 42

Vice president, core IT
Quintiles, Durham, N.C.

What he does: Donnici is in charge of all core IT functions at Quintiles, a tall order at the tech-heavy, data-centric company, which specializes in biopharmaceutical and health sciences analytics. Donnici's group of about 300 staffers and 100 contractors oversees infrastructure, data center, security, storage and application delivery to Quintiles' 27,000 employees worldwide.

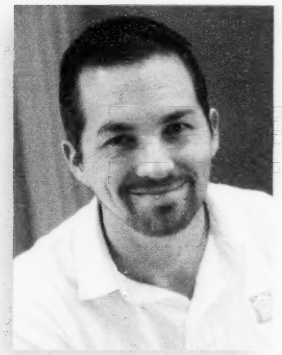
What he brings to the table: A business-centric perspective and a calm attitude — both of which Donnici believes are crucial for today's tech leader.

"That business perspective is the most important thing for IT — understanding the organization and where our solutions fit their needs in terms of cost and value," he says. "I started out on the business side" — he has a degree in business administration and finance — "but I've done the technical work too. That perspective is extremely important in figuring out what IT needs to deliver back to the business."

As for his leadership style, Donnici believes it's important to keep calm, both day to day and during a crisis. "Attitude is a big challenge for IT leadership," he says. "Things are going to break every day, and you are going to have critical incidents that can be very difficult. The key is to maintain a level of calmness — to calm the fires, control the madness, communicate with the CEO or whoever."

His vision for IT: Donnici is excited about accelerating the company's push into mobile devices and apps. "We launched a BYOD program last year, and we've been very successful," he says. Mobility gives Quintiles an opportunity to rethink how it delivers services, with an emphasis on simplifying the employee's workday. "With personal lives and business lives merging more than ever, there's tremendous value in being able to use one device for training or to submit a requisition for approval," he says.

Donnici finds inspiration in the way his own children wholeheartedly adopted and adapted to the iPad. "I'm an IT guy at heart. I love technology and how it has the power to simplify your life," he says. "That excitement fuels me and my team as we try to make an impact with mobility. It's just a question of how quickly can we flip the culture." ◆



Eric Rees
DIRECTOR OF INFORMATION TECHNOLOGY, INTERO REAL ESTATE SERVICES

Putting Innovation First

Switching to Microsoft's online productivity software has enabled Intero Real Estate Services Inc. to spend less on overhead and more on growing the business.

Established in 2002, Intero Real Estate Services is the largest and fastest-growing brokerage in Silicon Valley. In this Q&A, director of information technology Eric Rees discusses how budget and IT staffing constraints led Intero to replace its onsite productivity software with online systems from Microsoft.

Why did Intero decide to adopt an online business tool?
Technology budgets are always tight in the real estate industry, and most agencies have small IT staffs. Here at Intero, in fact, the IT department is just three technicians including myself. We were looking for creative ways to be more efficient and concluded that switching to online productivity tools would help us save money on servers and simplify administration.

What solutions did you evaluate?
We're headquartered in Silicon Valley, so naturally Google Apps was the first solution we investigated. Based on a trial deployment within my IT group, we concluded it wouldn't be a good fit.

What were your concerns?
Most real estate agents have limited technical skills and resist change. Google Apps works with Microsoft Outlook, which our agents know and like, but it works differently. When I showed it to a few agents, they had lots of questions, and I just knew that rolling it out companywide would zap their productivity and mine.

Plus, the integration with Outlook isn't smooth. For example, you have to use a separate application to sync calendars and contacts. That's another product we'd have to support, and the whole point of moving to hosted software was to reduce our IT workload, not increase it.

What led you to choose Microsoft's online solution instead?
We'd been using Microsoft Exchange on site for years, so we already had the skills we'd need to manage the online version of that system. Also, Microsoft's online software integrates seamlessly with Outlook, so it would provide our agents a familiar experience and keep them productive and satisfied. Last but not at all least, Microsoft's support offerings are much better than anything available from the other vendors we evaluated, which really gave me peace of mind.

Have you taken advantage of Microsoft's support?
Yes. One of their associates was on site with us for a week during pre-deployment preparation, and he really helped us come up with a solid rollout plan. Later, another person in their call center helped us complete a long series of customizations very quickly. He was really a lifesaver.

How has using Microsoft's online solution benefited Intero?
First of all, our agents love it, and the happier they are the more effective they are at serving clients and closing deals. Additionally, keeping up with technology is important, especially in the Bay Area, and Microsoft adds great new features to its online software all the time.

Most importantly, though, my team and I don't spend time on hardware and software management anymore and we don't spend money every few years upgrading our servers and software, because Microsoft takes care of all that for one monthly fee. It's an excellent value, and has freed us up to concentrate more on projects and systems that help grow the business. As far as I'm concerned, switching to Microsoft's online productivity software from Microsoft is the best IT decision Intero has ever made.

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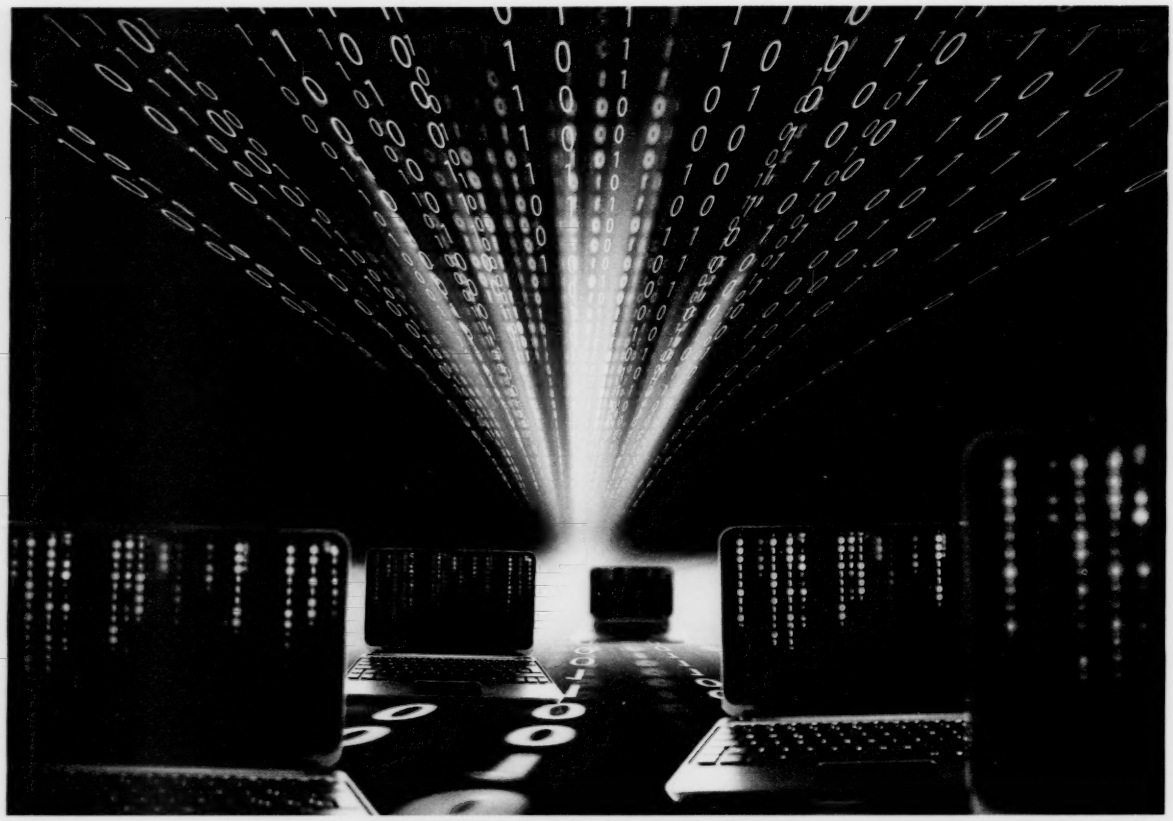

DESKTOP DECISIONS

Mobility sparks a move toward *desktop virtualization*, as benefits begin to outweigh challenges and ROI battles. BY STACY COLLETT

AT THE NEW Johns Hopkins Hospital in Baltimore, the maxim "do no harm" extends beyond caregivers to members of the technology team, especially when they undertake a sweeping desktop virtualization project that could impact the daily routine of up to 9,000 clinicians.

"If we're going to take on technology change inside a critical care setting, and with systems that serve our sickest patients, we've got to have a well-thought-out plan for making sure it works and that there's backup," says Stephen Sears, director of cloud and virtualization services at the 1.6 million-square-foot hospital.

The sheer physical size of the new hospital meant clinicians would need to be more mobile and rely more heavily on wireless computing. In addition, caregivers were adopting a new clini-

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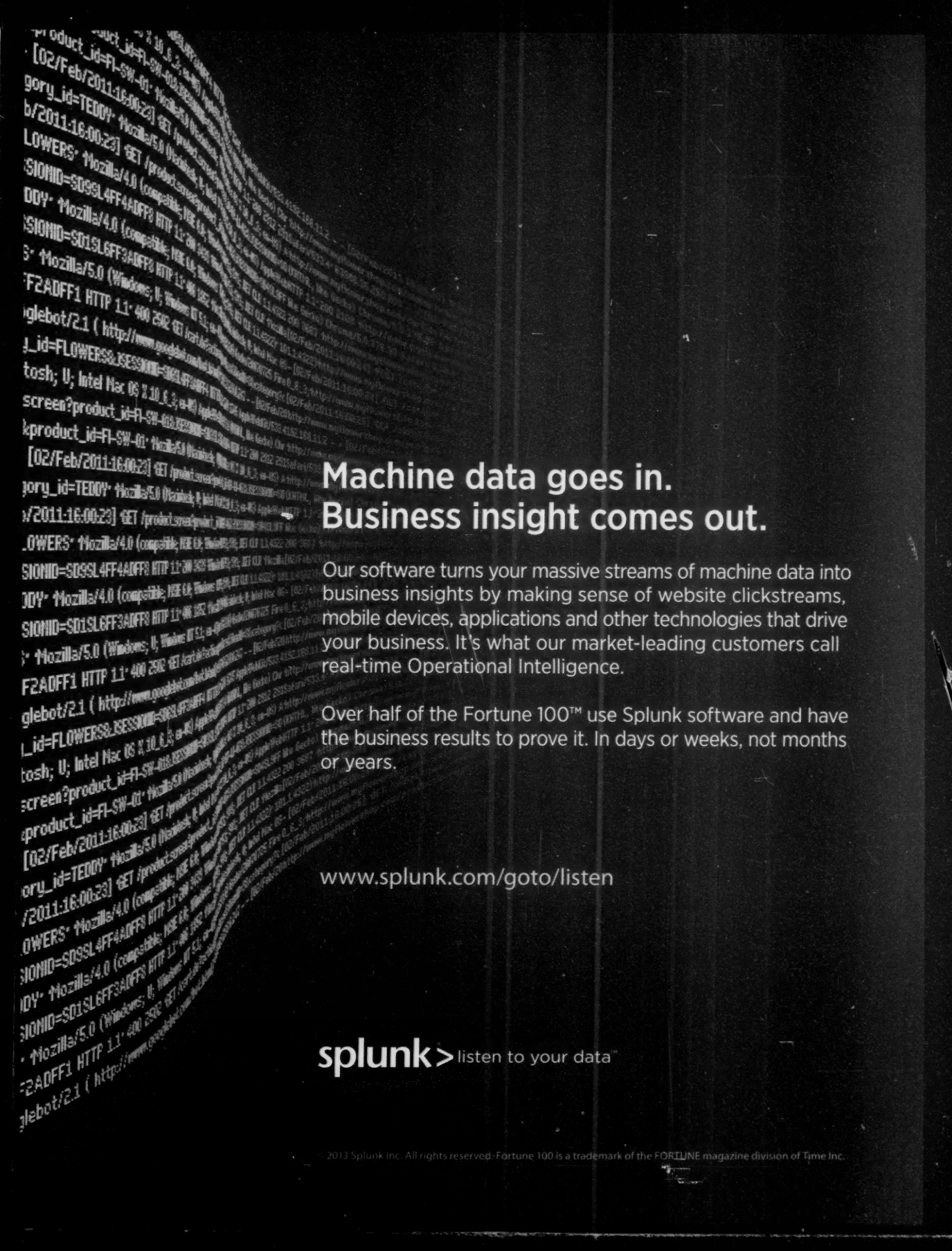
Machine data goes in.
Business insight comes out.
Our software turns your massive streams of machine data into business insights by making sense of website clickstreams, mobile devices, applications and other technologies that drive your business. It's what our market-leading customers call real-time Operational Intelligence.
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cal documentation system, and Sears knew that they would be spending much more time on desktops and mobile devices.

So the IT team proceeded cautiously with one of the largest desktop virtualization projects of its kind — one that combined VMware's View desktop virtualization product, the hospital's identity management program, proximity card technology and single-sign-on capabilities. While the initial costs were comparable to the costs associated with implementation of full desktops, the improvements that the virtual desktop infrastructure (VDI) promised to yield in clinicians' mobility and workflow — and ultimately patient care — solidified the project's business value.

"The level of enthusiasm around us giving them a portable desktop was kind of crazy. It felt like I was giving out stuff at an Oprah show," Sears recalls. When he first showed a group of child life specialists how they could take notebooks from session to session and interact with applications in the data center, "they were amazed," he says. "We were real heroes."

While desktop virtualization provides many benefits, until recently, it has also come with concerns about elusive ROI, scalability and storage headaches, desktop latency and slow adoption by skittish users. But today many companies are giving virtual desktops a try anyway as workers demand more mobility and IT departments seek easier desktop management.

Companies with successful VDI implementations have worked through the obstacles and report happy, more mobile and productive users, better security, fewer IT headaches related to maintenance and repairs, and minimal new expenses. What's more, many companies that move to virtual desktops already have virtualized server environments, meaning they have the storage, platforms and licenses necessary to make the VDI implementation fast and relatively inexpensive.

"I think they've gotten a little smarter about how they deploy desktop virtualization," says Dick Csaplar, an analyst at Boston-based Aberdeen Group. "They don't look at it as something that they spread evenly across the whole organization. I think they're much smarter at targeting user groups and use cases, and they're not looking at it as a panacea like server virtualization."

There are still challenges associated with desktop virtualization. In some cases, it's not initially cheaper than a full desktop PC environment. Moreover, virtual systems may require a lot of storage, and it's important to ensure that virtual systems don't put undue demands on IT resources at certain times. But those who have embraced desktop virtualization say the benefits outweigh the challenges.

'Invaluable' Flexibility

"I think the flexibility of allowing [users] to decide where and how they do business is invaluable," says Michael Fergang, vice president and CIO at The Grange Mutual Casualty Group, which deployed about 150 virtual desktops in its training and IT quality assurance departments.

At audio communications manufacturer Plantronics in Santa Cruz, Calif., about a quarter of the 1,700 knowledge workers connect iPads to a virtual desktop infrastructure.

Tom Gill

"They want to be able to do their work whether on the road or here at headquarters, and [they want to] use apps that may not be supported on [mobile] platforms, such as an expense report or a time management tool," says CIO Tom Gill.

When the first iPads began trickling in, Gill's team created a virtual desktop platform that gave users access to applications that typically don't work well on the devices, such as Java. A second platform was also created to access a few business intelligence apps.

"We want to be proactive," Gill says. "Instead of saying no [to workers using their own devices], let's figure out exactly what we can do." The company had adopted virtual servers and SANs years earlier, which made the $50,000 investment on a virtual desktop platform "really very minimal for a company of our size," Gill adds.

IT consulting firm Digital Intelligence Systems (DISYS) in McLean, Va., is migrating its 500 U.S. employees to virtual desktops to standardize processes and reduce the number of tools its workers use. The firm issues VDI instances to all new employees, as well as to workers whose PCs are up for refresh. But employees also have the option of using their own devices at work and will be reimbursed for a portion of the costs, depending on their business function. Or they can receive a stipend to buy the device of their choice.

"The goal is to make [using technology] simple," says IT director Collin Hachwi. "We don't want them bypassing us. We don't want to be viewed as a barrier to anything. We want to support their workflow and their day-to-day operations."

Trial and Error

Iowa Workforce Development has used virtual desktops for three years at its Des Moines headquarters and at 19 offices statewide. More than 75% of its 650 employees use VMware View on thin clients for daily operations. And members of the public access state employment services via virtual desktops at public locations such as libraries.

CIO Gary Bateman says desktop virtualization helped the agency streamline operations, improve services to the public and save money on maintenance and upgrades. But that wasn't always the case.

When the agency first rolled out virtual technology, the systems ran on old equipment. "The servers and SANs were not up to par," Bateman recalls. Desktops and servers "ran slow," he says, "and people got a bad taste in their mouth. We really had to overcome that and prove to people that they would run correctly." Once the agency moved to NetApp SANs with solid-state disk drives, "floating" virtual desktops, which are newly created from a master template each time a user signs on, were created more quickly. "People loved them," he says.

VIRTUAL DESKTOP BENEFITS ...

Quicker application installations	43%
Reduced desktop support	41%
Improved control of desktops	30%
Support for at-home workers	24%

... AND CHALLENGES

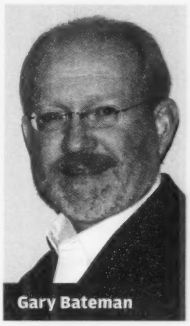
Software licensing terms	46%
Uncertain ROI	37%
Lack of budget	33%
End-user acceptance	32%

SOURCE: ABERDEEN GROUP; 121 RESPONDENTS; NOVEMBER 2012

VIRTUAL DESKTOPS TO THE RESCUE

DESKTOP VIRTUALIZATION CAN SAVE THE DAY IN A CRISIS. At Iowa Workforce Development, while upgrading more than 150 desktops from Windows XP to Windows 7, a temporary staffer accidentally dragged a folder for all of the agency's PCs into the reimaging folder, and machines all across the state started to undergo the reimaging process.

"When we saw what was happening we immediately shut it down, but we had affected more than 150 machines at that point," CIO Gary Bateman recalls. "The machines were inoperable at that time. We knew it would take days and possibly weeks to get those back online."


Gary Bateman

Instead, Bateman decided to create virtual desktops out of the affected machines by running an Ubuntu operating system on a Linux kernel and adding a VMware View client that hooks to the virtual desktop. "We were able to get all 150 machines up and running in probably two to three hours," he says.

– STACY COLLETT

Virtual desktops were so successful that when the state was faced with closing 16 of its 35 unemployment offices, Bateman launched 3,000 virtual desktops at 500 public locations to give residents many of the same services they would have received at those offices — all with no new investment on the back end, since servers, software and licenses were already in place.

Looking ahead, Iowa faces a consolidation mandate, and the data of all agencies will be combined "into a couple of data centers," Bateman explains. "As we move all of our equipment into a common data center, we're looking into how to use that VDI for other agencies, as well."

Solving Storage and Speed Issues

Some early adopters found that virtual desktops required too much storage, especially when completely re-creating each desktop on the back end. Storage space quickly ran out, and systems slowed to a crawl when the desktops needed upgrades or virus patches. That problem has largely been solved with better time management and by replacing static desktops with floating virtual desktops.

In 2011, when DISYS piloted virtual desktops for 45 days with 30 employees, the firm was stunned by how much data users had stored on their desktops. "Users with 300GB drives had filled up 250 gigs," Hachwi recalls. "We had not allocated that to every user — it was more of a 30GB size limit." The pilot group had to cull through data and decide what would be relegated to a private cloud. "That was a very strenuous process," he adds. "It took some people longer to get onto VDI because of it."

DISYS also went with floating desktops, where sessions are destroyed every time a user signs out and rebuilt when he signs back in, with data and preferences in place. "It made the most sense for us. It also kept the overall size of the required infrastructure very low," Hachwi says.

With a single template for creating virtual desktops, the upgrades and virus patches are carried out at one time. And because desktop sessions are destroyed, viruses are less likely to spread throughout the organization.

Managing I/O issues is also critical to a smooth user experience. "Virtual desktops are volatile, and you really have to have your arms around that and understand that you're going to have to plan for that volatility — such as from a resource consumption standpoint," says Adam Wilson, enterprise applications supervisor at The Grange Mutual Casualty Group.

"I might have one user that runs reports at certain times a month. They're sharing resources with other folks, so they can affect [overall performance]," Wilson says. "Or if 500 people sit down at 8 a.m. to log in, that's a completely different scenario on a regular desktop versus a virtual desktop. You have to architect around those scenarios."

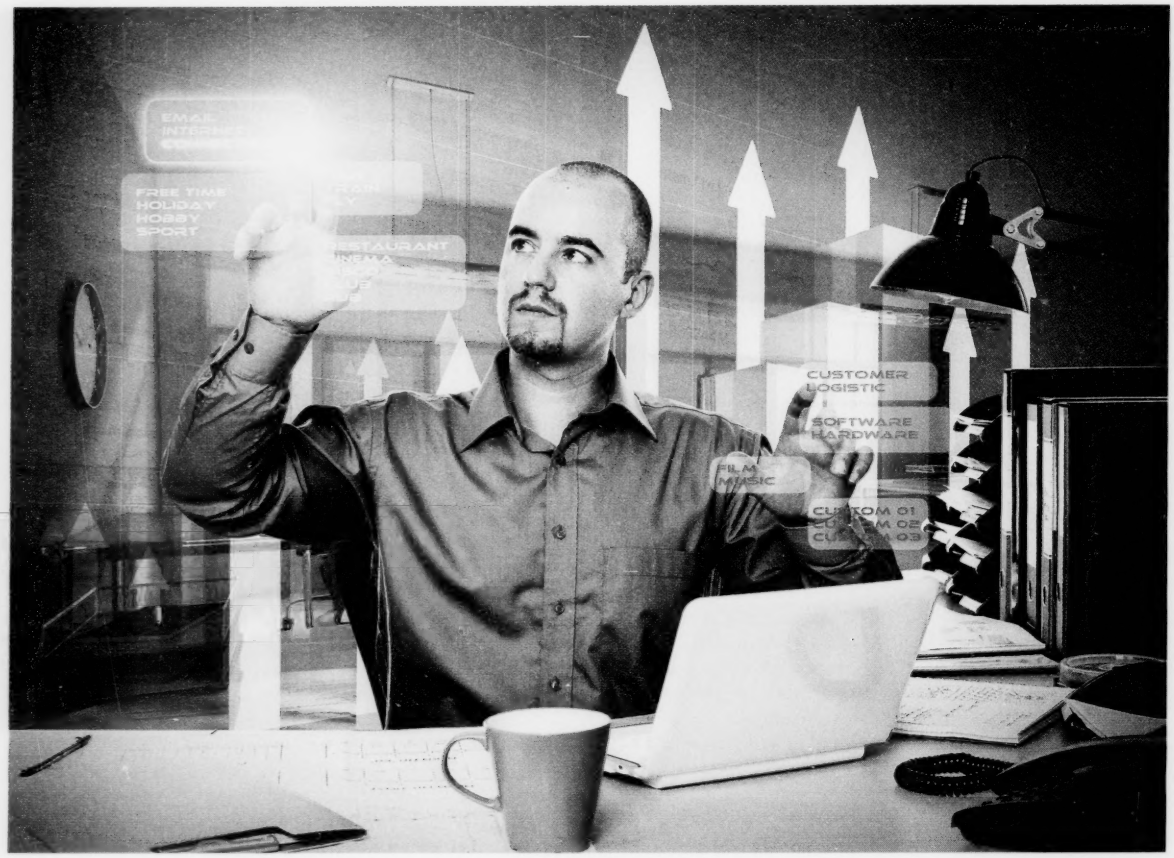
> "The level of enthusiasm around us giving them a *portable desktop* was kind of crazy. It felt like I was giving out stuff at an Oprah show."
>
> **STEPHEN SEARS,** DIRECTOR OF CLOUD AND VIRTUALIZATION SERVICES, JOHNS HOPKINS HOSPITAL

Safety Nets

VDI setups also give IT departments more control over data. At DISYS, "we've had instances where our sales guys lost their laptops," which left sensitive data vulnerable, Hachwi says. Now, all the data resides in the data center, so "if they lose or break the device, they just sign in to something else. It's definitely a fail-safe for us," he says.

At Johns Hopkins Hospital, where speed and accuracy can be a matter of life and death, Sears made sure there was a backup option for clinicians' systems. "They can always get to the old apps by walking up to a [PC at a] clinical workstation," Sears says. "It's not hard to maintain the old system, and clinicians are not confused" when switching back and forth between systems. Today, about 5,000 clinicians use virtual desktops daily. Others prefer the old system. And some — such as an ICU nurse who spends most of the day with one patient, for example — just don't need VDI. "We don't force people to do any one thing," he says. "They have options." ◆

Collett *is a* Computerworld *contributing writer. You can contact her at stcollett@comcast.net.*



TECH HOTSHOTS

Rise of the UX Expert

As the digital world shrinks down to a screen the size of your hand, demand for user experience designers explodes.

BY HOWARD BALDWIN

ROBERTO MASIERO remembers vividly the moment in 2011 when it became clear to him that designing a mobile application was considerably different than designing a desktop application.

As head of the innovation labs for ADP, the $10 billion payroll services company, he managed the engineering team tasked with creating ADP Mobile, a version of the company's human capital management application tailored to mobile devices.

"We started out with a list of 100 features that we thought were awesome," Masiero remembers, but his team's enthusiasm ran smack into the collective disdain of user experience designers brought in from an outside firm. The consultants deemed feature after feature irrelevant for mobile users, arguing that so many options would confuse people.

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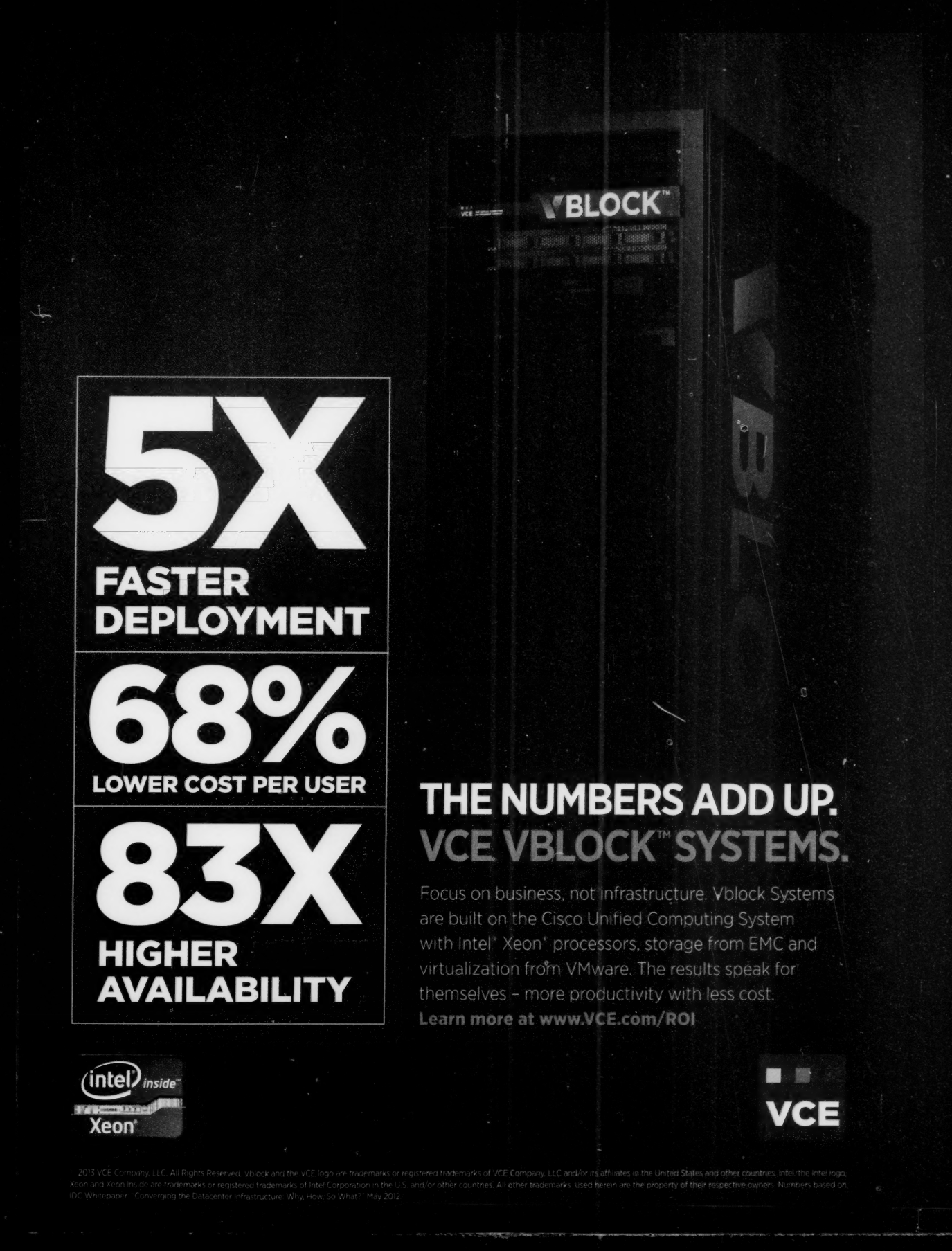
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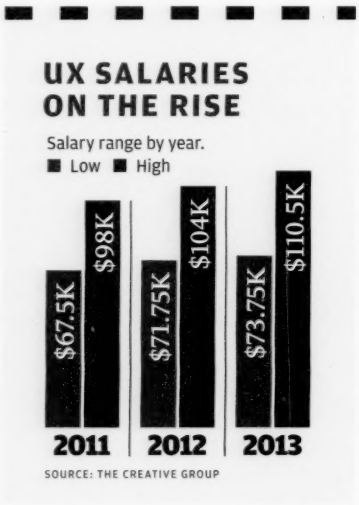
By the time the designers were done, they had whittled away 80% of the features. "Their message was simple: Less is more," says Masiero. In a mobile application, it's better to neatly provide the 20 most important pieces of information than it is to force users to navigate through 100 features that they might never use. "You have to drop completeness in the name of usefulness," he says.

What's more, Masiero, like a lot of other IT leaders, realized that in this age of mobility and user-driven technology, IT shops that don't have a user experience expert onboard need to get serious about begging, borrowing or stealing to find one — and that's an increasingly difficult proposition.

Developers with user interface (UI) and user experience (UX) expertise are hot these days, according to Shane Bernstein, managing director of QConnects, a Culver City, Calif.-based digital recruitment firm. And this is a fairly recent development, he says. From 2010 to 2011, QConnects saw a 25% increase in the number of requests for UX designers; from 2011 to 2012, the increase was 70%.

Salaries are going up as well. Recruiters cite starting salaries ranging from $70,000 to $110,000, with the upper end hitting $150,000 and sometimes more. The Creative Group, a division of staffing firm Robert Half Technology that specializes in design, marketing and interactive talent, began tracking UX designers separately in its annual salary survey in 2011. Salaries for those professionals went up 6.2% in 2012, and the firm expects another 4.8% increase in 2013.



Users Expect Perfection

In design parlance, the user interface is what the user sees and the user experience is how the application behaves. Both recruiters and practitioners stress that the latter is as important as the former. Therefore, designers need to concentrate not only on how an app looks, but on the whole "wireframe" of the application, and where requests are going into the back end of the system.

What's driving the demand for such skills? Many people lay the credit — or perhaps blame — on Apple, with its near-fetishistic attention to how design, hardware and interface intersect. "Now people expect everything they interface with to have the ease of use of an iPhone," says Matt Miller, CTO at Irvine, Calif.-based technical recruiting firm CyberCoders.

"Apple forces everybody to match their aesthetic," agrees Masiero. "The image of your brand is at stake in your mobile application now. Companies that have great design, whether they're a restaurant chain or a car manufacturer, have a more valuable brand," he says.

Moreover, as mobile computing explodes, a company's entire customer base will demand a consumer-like experience with its products. As Masiero notes, 10 years ago ADP's sole audience was the human resources department. That's no longer true.

"With mobile devices becoming ubiquitous, we have to serve 30 million users, from somebody on a construction site to an airline pilot to a hotel manager. And you have to create a design so that the experience is accessible to everyone, while still providing them with a sense of uniqueness," he says.

High Tech, High Touch

UX specialists are hard to find in part because the position requires expertise in multiple disciplines: design, programming and human behavior. "We do a little bit of market research, a little bit of psychology," says Whitney Quesenberry, who runs a UX design firm in High Bridge, N.J., and has done work for Novartis, Siemens, Dow Jones and Eli Lilly, among other companies. "UX is like programming — there's not just one job involved."

Donna Farrugia, The Creative Group's executive director, insists that the more cross-disciplined UX designers are, the better. They ideally should have good design and layout chops as well as technology skills that include HTML and JavaScript expertise. "The ideal is this hybrid person who's both right-brained and left-brained, high tech and high touch," says Farrugia.

That pretty closely describes Michael Beasley, a designer at Internet marketing agency Pure Visibility in Ann Arbor, Mich. He got a bachelor's degree in both English and music from the University of Michigan and then stayed to get a master's degree in human-computer interaction from Michigan's School of Information in 2005.

"That's where I got my approach to interface design," Beasley says. "The multidisciplinary approach taught me design, human cognition and usability principles and methods. I also got a good understanding of how organizations work and information flows. That made me a pretty well-rounded person."

That kind of background sits well with IT managers like Masiero, for whom good design goes deeper than rounded corners on icons. "I want you to be a wizard of understanding the mental model of the user and translating that into the behavior of the application. You have to always think about making the user comfortable, about not creating any friction between what the user expects to happen and what the application expects from the user."

"Designers who understand human interaction are one step ahead of everyone else," says Farrugia. "They are rare and precious commodities."

Look for Homegrown UX Talent

With so much riding on the success of mobile apps these days, most companies feel they have to find UX talent in-house instead of waiting for colleges and vocational schools to churn out more graduates with the ideal mix of design and coding sensibilities.

Many are forming multidisciplinary teams because they know it's unlikely they'll find one perfect UX expert. "A designer might not be able to program, but they should be able to have a reasonable conversation with a programmer so they understand the impact of a design decision," says Quesenberry.

Beasley concurs. "A really creative designer may help [the organization] make big leaps to a whole new level of quality. But the quantitative side is just as important," he says. "Designers would do well to get more comfortable with the technical side, to build up those skills and knowledge." ◆

Baldwin *is a frequent* Computerworld *contributor.*

Security Manager's Journal

MATHIAS THURMAN

Spam Makes a Comeback

Out of the blue, phishing attacks previously caught in the spam filter are getting through to employee inboxes.

HOW COULD SPAM be an issue for a security manager in 2013? It's been years now since we all started subscribing to services that do a phenomenal job of filtering out advertisements for prescription medications and exotic vacations and dumping them into spam folders, where they usually accumulate and never bother anyone.

Until this past week, I likely hadn't spent five minutes in 10 years thinking about spam — a testament to the effectiveness of spam filters. After all, about 98% of our incoming email is spam. If we didn't have effective spam-filtering engines, every employee would receive an extra 40 to 50 emails per day. That would hit productivity.

Probably because real spam has long been out of sight and out of mind for our employees, our general counsel was dismayed when he recently started regularly receiving emails that he deemed to be spam. He forwarded some of them to me, wondering what was going on. The emails purport to be from organizations such as ADP, FedEx and eFax, and at first glance they look legitimate. Only an inspection of the email headers would tell you otherwise.

Some of the emails contain links to questionable sites in places like China and Russia. Some include attachments that are supposedly required certificates or e-fax documents but in reality are zip files containing an .exe file. In short, these are not ordinary spam — which is annoying and clogs networks but is generally benign. No, these are phishing attacks.

Soon, others in the company began to complain about an increase in spam. Why, I wanted to know, weren't these phishing attacks being intercepted and shuttled away from employees' inboxes?

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I was aware that we have been migrating users to a managed Microsoft email service and that there had been talk of saving money by dropping our current spam provider in favor of Microsoft's spam prevention system, which is bundled with the mail service. I figured that was likely the root of the problem, and sure enough, my suspicions were right.

We previously had not only inspected attachments, but also restricted the types of attachments authorized to be delivered. We also had what is called Sender Policy Framework checking enabled, which verifies that senders are really who they say they are. When the email team migrated our email, they neglected to enable these critical security functions. And thus spam has become an issue of concern for me in 2013. Now, employees potentially could click attachments or links and execute malicious programs.

Luckily our endpoint protection software prevented most of the attachments from causing harm, but there wasn't 100% detection. As a result, I'm having my security team analyze the suspicious email attachments and links that have been identified and build rules in our security incident and event management tool to look for evidence that employees have clicked on any of them or downloaded nefarious software.

We have also recently enabled a really cool feature within our Palo Alto Networks firewalls called Wildfire, which redirects executable files to a secured sandbox, where it evaluates the program to determine whether it is malicious. Unfortunately, since this is a new functionality, we're simply monitoring the events and haven't yet enabled blocking.

We've had to take action a couple of times, but we've been lucky so far. For example, one attachment that was executed by several employees proved upon evaluation to be programmed to reach out to a server in China to download additional software. Luckily, the server in China had been taken down.

Now, we have to continue to monitor for suspicious activity, and I need to ensure that our current email architecture is deployed in a secure manner. ◆

This week's journal is written by a real security manager, ***"Mathias Thurman,"*** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

> **Until this past week, I likely hadn't spent five minutes in 10 years thinking about spam.**

Trouble Ticket

At issue: A change in the email system has let some dangerous spam show up in inboxes.

Action plan: Stay alert for evidence that employees have fallen victim to phishing attacks.

Career Watch

IT Education: IU Must Be Doing Something Right

IT-related academic programs tend to be judged on how well getting a degree correlates with getting a job. On that basis, Indiana University's Master of Science in Security Informatics program is beyond successful. Many of its students get job offers they can't refuse – some without ever finishing the program.

PHOTO COURTESY OF INDIANA UNIVERSITY

According to professor L. Jean Camp, director of the five-year-old program, about a quarter of her students have left the program early because of jobs in their field, and nearly all of the remaining students have jobs lined up after graduation. She said students leaving the program for a first job are averaging annual salaries of $68,000.

The IU program has a jobs focus, with internships replacing a thesis requirement. Camp says that security has an inherent human component "because it is about who to trust and how to manage risk." For that reason, the program is seeking students with backgrounds in disciplines such as psychology, business and political science, as well as computer science and math.

DEVELOPERS IN DEMAND

According to a recent survey, software developer is the IT position that is hardest to fill, because of both a shortage of suitable talent and a rise in demand.

The respondents put these three positions at the top of the list:

Job title	2012 median base salary
Software developer	$90,000
Software engineer	$101,000
Project manager	$100,000

55%
Percentage of surveyed IT leaders who expect their staffs' salaries to rise in 2013.

SOURCE FOR BOTH CHARTS: TEKSYSTEMS SURVEY OF OVER 600 IT LEADERS, SEPTEMBER 2012

ASK A PREMIER 100 IT LEADER

Marty Paslick

The CIO at HCA answers questions about **finding a good tech job** *while living in a rural area and more.*

I have never really strayed from my hometown, which is in a rural area. For the past 15 years, I have managed to string together a career doing a bit of everything related to IT for several small businesses, but I've been out of work for four months now. I really don't want to live in a city. Any advice? Depending on your specific skills, teleworking could be an option. It continues to expand in popularity. Teleworking isn't for everyone, though, and most companies, including mine, require candidates to demonstrate a great work ethic and ability in the traditional work environment before they will allow them to work remotely. And of course, remote arrangements can be reversed at any time. Perhaps there are companies close to you that will extend a flexible remote working arrangement to you.

If you have a question for one of our Premier 100 IT Leaders, send it to **askaleader@computerworld.com,** and watch for this column each month.

What is the outlook for a 29-year-old graduating with a degree in software engineering? Right now I am working on a help desk. There are still plenty of opportunities for software engineers who possess differentiating engineering skills, but great success seems to be more and more reserved for those who intimately grasp the business concepts for which they are engineering, can effectively establish relationships through top-notch interpersonal skills, and can apply great imagination and creativity. Commodity-based engineering increasingly is being outsourced. In other words, success is to be had for the top 25% of engineers, and an ever lengthening search may be in store for those not in that class.

I will be completing a degree in computer science soon. I am choosing among a few technical courses to satisfy the requirements but wonder whether I should substitute one or two business classes instead. I actually began my academic career in the business school, and after graduation I returned to school for a second undergraduate degree within the engineering school. The combination of the degrees jump-started my career, and I believe adding a couple of business classes could do the same for you. I would investigate the possibility of classes that may focus on business analysis. Mastering the frameworks used to understand business applications and processes can be hugely beneficial. In addition to business analysis, I would also suggest looking into classes that focus on disciplines like Lean or Six Sigma.

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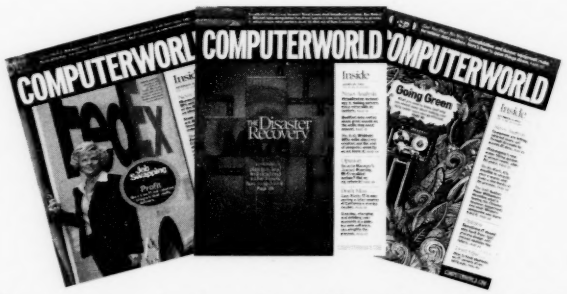

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SHARKTANK

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

HAL MAYFORTH

Questions, Questions, Questions

Big sports venue calls in this consultant pilot fish to be project manager for the opening of the new grandstand. "A critical part of this is the world-class Wi-Fi system that the CEO has been pushing in marketing materials and the press for a year," says fish. "I met with the IT manager to ask how the Wi-Fi project was going. He said it was a fantastic system that will do this, that and the other thing."

Then fish asks a few pointed questions: Can it do live TV? No. Can it do live betting? No. Can we handle the 50,000 people on opening day? No. How do people log on? Using Facebook. Our customer profile has 85% of them over the age of 55. Do you think many of them have Facebook? Have you *read* the CEO's press release describing the system? Sighs fish, "Owing to a sudden family emergency, the IT manager had to take six weeks' leave immediately."

Guessing Game

Pilot fish at this financial firm is reviewing new security rules, and stops dead at one item. "It read: All passwords must be difficult to guess," says fish. "I sent an email to the Audit and Compliance Department asking how I could tell whether my staff and I were in compliance. There was no reply, but the requirement was not removed."

Do as I Say, Not . . .

The data warehousing team at this university's IT department has started using agile project-management techniques. "The agile techniques direct us to have 15-minute, stand-up status meetings at the beginning of every day," reports a pilot fish there. "After several weeks, some people were occasionally showing up late. One day, the project manager came to the meeting with a message from the boss. The boss wanted to remind everyone that the meetings started at 8:15 a.m. sharp. Furthermore, the boss wanted to emphasize the importance that everyone get to the meetings on time. Also, the boss would be a few minutes late today."

Just Her Way of Saying Hello

New IT pilot fish hears his name yelled over a cubicle wall, so he goes over to see if someone needs help. "The person went on a 10-minute tirade about how everything was IT's fault and we definitely can't do anything right," says fish. "After she tired herself out, I finally spoke, asking what I could help her with. Her response was forget it, she didn't need help."

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OPINION

THORNTON A. MAY

IT's Epic Challenges

IT leaders must learn to think outrageously and to be brutally honest.

THE TEA LEAVES are prophesying that epic challenges loom for businesses in the months, years and decades ahead. The worry that is nagging many CEOs and board members is whether their IT leadership teams will be capable of meeting those challenges.

I have many opportunities to hear the concerns of corporate chieftains in the course of conducting research in programs at five universities: the IT Leadership Academy at Florida State College at Jacksonville, the CIO Solutions Gallery at Ohio State University, the CIO Practicum at the University of Louisville in Kentucky, the CIO Practicum at the University of Kentucky and the Olin Innovation Lab at Olin College of Engineering in Needham, Mass.

Among the challenges that these people see ahead of them, two stand out.

■ Challenge No. 1: IT can't keep thinking small.

Scope is a problem for IT leadership. I'm not talking about scope creep, which can plague projects. For IT leadership, the problem is the opposite: scope compression. IT leaders need to give themselves permission to think big, to think outrageously and to think totally outside of the box.

When IT leaders let their days be consumed by the whack-a-mole hell of fixing what's broken and keeping the lights on, IT can't do all that it should for the organization. A new mindset is needed. As Barbra Cooper, retired CIO of Toyota Motor Sales U.S.A., notes, IT today tends to see itself as serving the business. That's laudable as far as it goes, but what's really needed is a leadership state of mind more attuned to *leading* the business.

If the challenges coming our way are epic, how can we respond with efforts that are minuscule? And yet IT's value impact is being made minuscule, with resources allocated to trivial pursuits. Think of the leaders who populate the great works of classical literature. Agamemnon, for example, was immortalized in Homer's *Iliad* for forcefully facing the challenge of sacking Troy. That primary challenge was topmost in his mind. He didn't get sidetracked with initiatives to cut the number of ships needed to carry the Greeks to Troy from 1,000 to 800. Such efficiency might have been applauded at the time, but if that had become Agamemnon's focus, at the cost of losing Helen, who would know Agamemnon's name today?

■ Challenge No. 2: IT must be brutally honest.

Sometime during the frenzy of Y2K and the large ERP deployments of a decade or more ago, a significant subset of IT leaders was seduced by the "five nines" — the concept that *everything* had to work flawlessly all the time. This had the knock-on effect of making IT the fiercest advocate of the status quo. IT migrated from being an agent of change to being an annihilator of change.

Just about everyone you talk to in the strategy industry has concluded that just about every discipline in just about every vertical market needs to be radically rethought. (See William C. Taylor's brilliant *Practically Radical: Not-so-Crazy Ways to Transform Your Company, Shake up Your Industry, and Challenge Yourself* and Barbara Kellerman's muckraking *The End of Leadership.*)

The narrative emerging from IT is in many cases very concerning. On the record, CIOs across the board are saying, "I have everything under control." Meanwhile, in off-the-record, one-on-one interviews, the story is, "Things just aren't working right in my organization."

The CIO needs to be the truth-teller at the vanguard of change and the radical and passionate advocate for the new and the next. ◆

Thornton A. May is author of *The New Know: Innovation Powered by Analytics* and executive director of the IT Leadership Academy at Florida State College in Jacksonville. You can contact him at thorntonamay@aol.com or follow him on Twitter (@deanitla).

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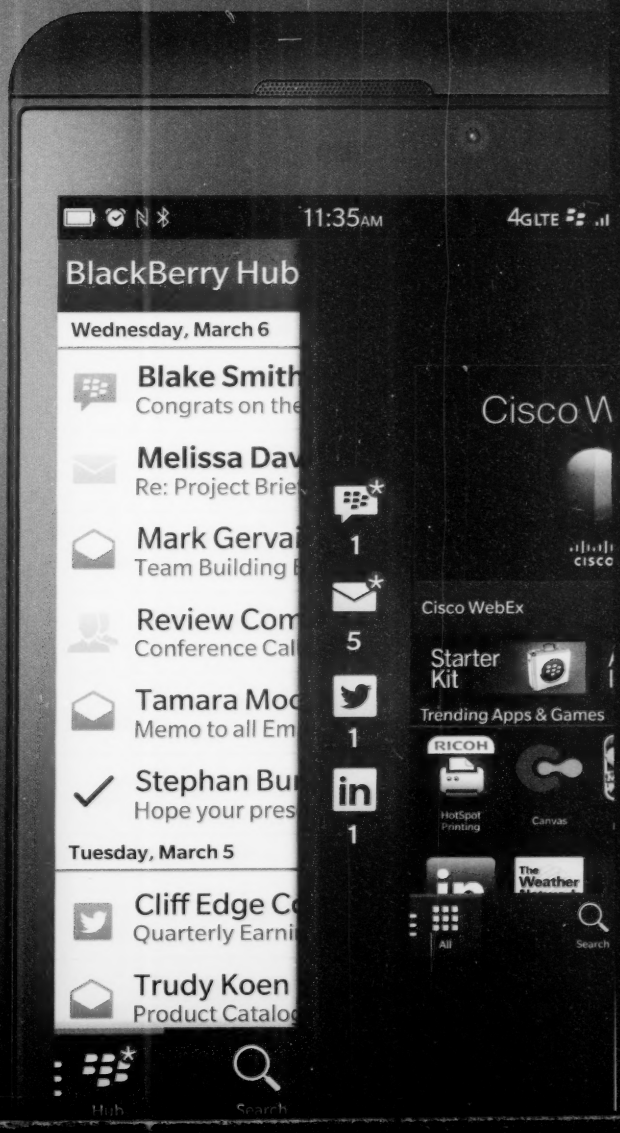

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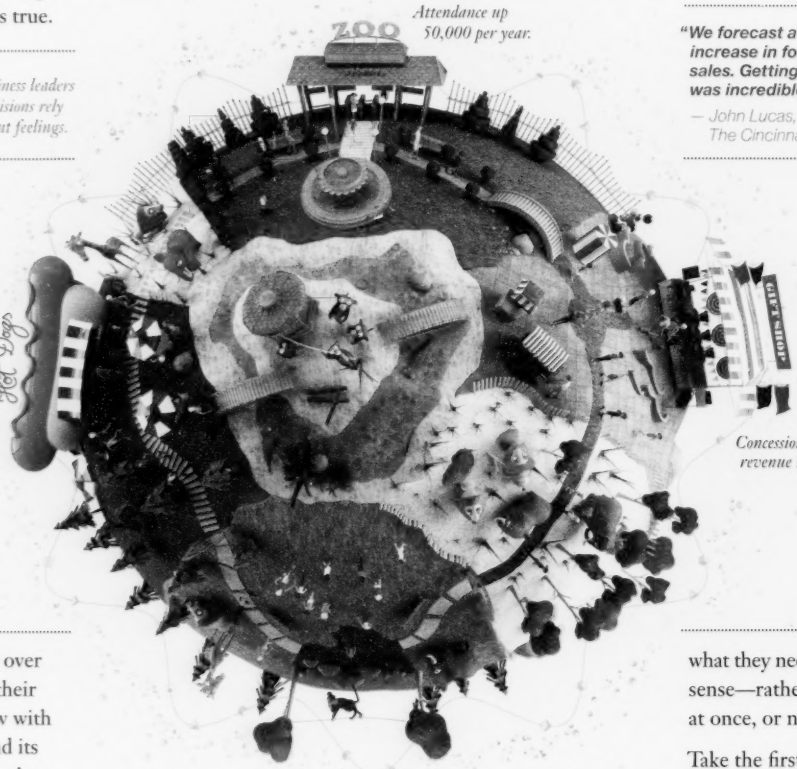

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